THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

September-October 1997

Fire on the O-Boat

What Happens When the Cable Breaks

The Final A-6 Barricade

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On the cover: An FA-18C of VFA-147 on approach.

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DEPARTMENTS

FEATURES

Fire on the

Fire is a constant threat for any ship's crew, and aircraft carriers have had their share of conflagrations. One of the most devastating was the fire that broke out in the early morning of October 26, 1966, on board USS ***Oriskany*** *(CVA 34). Forty-four officers and men died. The veteran ship was on her second of seven combat cruises during the Vietnam War.*

Only nine months later, in July 1967, USS ***Forrestal*** *(CVA 59) had a fire that killed 134. In January 1969, a fire on board USS* ***Enterprise*** *(CVAN 65) took 27 lives.*

The ***Oriskany*** *and* ***Forrestal*** *tragedies resulted in a major overhaul of firefighting and survival training, including the use and maintenance of oxygen breathing apparatuses (OBAs). More than 30 years after the* ***Oriskany*** *fire, we still can learn from the problems her crew faced, such as proper egress training and equipment operation.*

This story comes from an RF-8G pilot of VFP-63's Det G, part of ***Oriskany****'s CVW-16. Then-Lt. Coltrin had survived enemy flak and SAMs, but he found he now had to deal with what was potentially the most fatal enemy of all.*

by Cdr. Andre Coltrin, USNR (Ret)

Lt. Coltrin in an RF-8G during pre-cruise workups. (via Andre Coltrin)

It was early morning. The predawn launch had been scrubbed, and the ordies were downloading flares from the A-4s and preparing the aircraft for daylight operations. As two redshirts were taking the flares to the lockers, they decided to play catch. The fuse of one flare got pulled, and the flare ignited. Although the edge of the ship was not far away, in his panic, one of the airmen threw the burning flare into the flare locker instead of overboard. Before the Sailor could shut the locker door and dog it down, the explosions started. [*It was never determined that the ignition of the flare started with a haphazard game. Rather, a mishandling of the Mk-24 resulted in the flare's lanyard catching on something followed by ignition.–Ed.*]

The first blast ripped the door open with such force that the dogs were torn out of the edge of the door like large bites. The door threw the Sailor who was setting the dogs well clear before the first fireball emerged. The door then crushed a metal ladder behind it. Every few seconds, fireballs – with temperatures in the thousands of degrees – shot out the locker doorway like huge Roman candles and raced through the passageways of the ship. Oxygen and burnable material fed the fireballs as they went.

I was asleep in my stateroom, one deck below the flight deck, when the fire alarm went off. When the alarm was called, my roommate and I thought it was another drill. We had been having a lot of those during the cruise, and I rolled over to go back to sleep. As a member of the air wing and not ship's company, I would let them play fire drill on their own. Shortly thereafter, my roommate got up saying, "I heard something that sounded like an explosion." He left the room.

O-Boat

Still not too excited, I continued to try to sleep. Later, I heard the door open as someone came in. I heard a strange voice ask, "Is anyone here?" I asked who he was and he replied, "Seaman so-n-so," (I can't remember the name.)

I said, "Seaman, this is Lt. Coltrin. What are you doing in my stateroom?"

He replied, "Sir, the ship is on fire and we are trapped!" I decided to get up! I went to the door and opened it. I could see nothing but thick smoke. I put my arms and hands out into the passageway, and they disappeared in this white haze. I could feel many people lined up trying to get out of the area. It was too crowded to try to squeeze in. I went back into the room and shut the door.

At the start of the cruise, my roommates and I had installed an air conditioner in our room. We vented it into the head next door. It was very inefficient so we had sealed every air leak we could find in the room to keep the cool air in. This now paid off by keeping the smoke out.

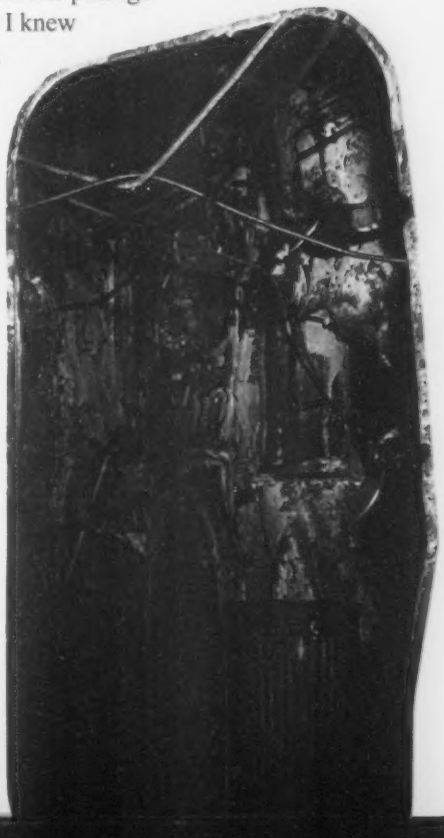
I put on my Nomex flight pants and shirt. [*At this time, several squadrons had nonregulation gear obtained through swaps with Army units.* ***Oriskany****'s squadrons sported camouflaged flight suits, as well as unofficial Nomex outfits and flight gear.–Ed.*]

The Sailor went to the phone to call for help, and I went back to the door and checked the passageway. He said no help was available, and I found the passageway still jammed with people.

The floor was starting to get hot and the tile was burning my feet, so I put on my flight boots. The smoke was now thick and heavy, and the room was very hot. We were being driven to the floor to breathe. I went to the sink and soaked two towels. I gave one to the Sailor and I wrapped the other, a black one, around my head and said, "Let's go."

As I opened the door, my companion darted to the left. I yelled to him that was a dead end, but he disappeared into the smoke. I went to the right. The passageway was now clear of people. The passageway led fore and aft. In about 15 feet it fed into a cross-ship passageway. I knew I was there when I ran into the knee-knocker. By this time, I knew the main fire was on the starboard side of the ship, so I turned right and headed to the port side. I did not turn fast enough and ran into a locker and smashed my hand. I later found out this locker contained OBAs, but it wouldn't have mattered because I didn't know how to use one. I wanted to continue down this passage until I reached the ladder that I knew went down to the hangar bay.

At about the point that I should have been coming to the ladder, I became confused because the port-catapult room was now on fire. The flames from the catapult room mixed with the smoke and disoriented me. This problem turned out to be one of my luckier moments. A friend of mine, the air-wing flight surgeon, found the ladder I was searching for. As he reached the first landing, the helicopter that was parked just below caught fire and roasted him on the spot.



An airman threw an activated flare into this locker, starting the conflagration. View is from the locker out to the passageway. The tremendous effect of the fire's blow-torching is evident.

All photos courtesy of the Emil Buehler Naval Aviation Library, National Museum of Naval Aviation.

Unable to find the ladder, I continued to the end of the passageway knowing that there was a hatch there that led to a catwalk outside. I reached the hatch and found it dogged down. Scared, disoriented, and finding it very hard to breathe I tried to undog the hatch. I thought I had undone all the dogs but the hatch would not open. I heard screams – I do not know whose, maybe mine. Frustrated and thinking I was going to die, I angrily kicked the hatch in a gesture of defeat. To my great surprise, it opened. I stumbled out onto the catwalk and laid there a few seconds, breathing the air.

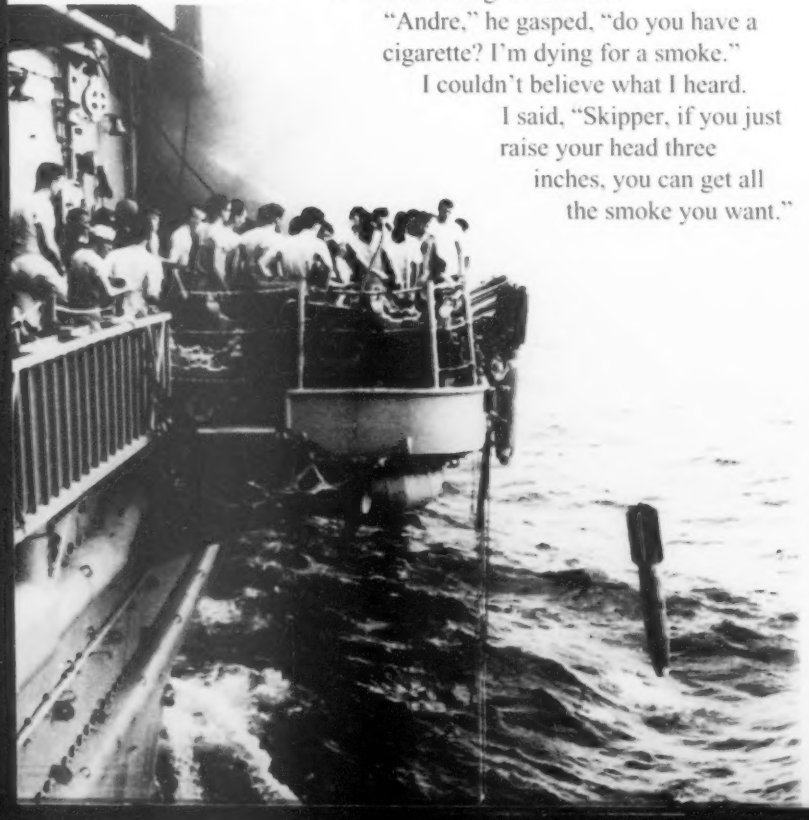
I stood up and looked across the flight deck. There were only a few inches of clear air between the flight deck and where the smoke was. The skipper had turned the ship, putting the wind from the starboard side, blowing the smoke to port to increase the visibility on the starboard side to fight the larger fire more effectively.

As I looked between the flight deck and the smoke, I saw the feet of two main groups of people. One group was near the island and the other near the fantail. I started crawling toward the group near the island. Suddenly to my right, I saw the CO of VF-111 crawling toward me.

"Andre," he gasped, "do you have a cigarette? I'm dying for a smoke."

I couldn't believe what I heard.

I said, "Skipper, if you just raise your head three inches, you can get all the smoke you want."



In one of the best-known photos of the fire, crewmen jettison bombs from a starboard sponson. Scenes like this led to the installation of bomb chutes in carrier flight decks.

He said, "No, no, I need a cigarette," and crawled off. I continued toward the island, where I checked in with the mustering officer and tried to see about the status of our detachment. Most everyone from the det had been accounted for. My roommate, who always wore a red-and-white striped night-gown to bed, looked very much out of place, but no one else seemed to notice. When he left the stateroom, he got caught up in the crowd in the passageway and was swept along with them without a chance to warn me of the real situation.

When he reached the cross-ship passage-way he did not turn right or left but contin-ued straight ahead, going into admiral's country. He ended up in the admiral's quarters and he, the admiral and a member of the admiral's staff pulled off the air-vent cover. They gathered around this 4-to-6-inch opening, breathing what air they could. A rescue team soon arrived and led them all to safety.

As I stood around, I noticed a lot of activity going on just forward of the island on the starboard side of the ship. Crews were pushing bombs and other explosives overboard. Men with OBAs were entering smoke-filled compartments to retrieve those explosives. They had wire-lead cables attached to their backs in case they became incapacitated. People outside could then drag them to safety.

I was very impressed by the bravery of these men. One of them was a young officer from VF-162, Ltjg. Jim "Flaps" (he had big ears) Andrews. He was willing to go any-where and do anything. More than once while I was standing there, one of these brave men had to be dragged out of the compartment by his safety wire because he had been overcome by smoke. It was here that I learned how to put on, test, and use an OBA. Unfortunately, a very large percentage of them were not useable and were being thrown overboard.

After my lesson, I joined a Marine and two white hats on a search party. There were still a lot people missing. I grabbed an untested OBA and followed them down a

couple of decks. When I put on the OBA, I found it almost useless. Although it did produce oxygen, the eyepiece was so scratched I could barely see through it.

We entered the dark, smoke-filled passageways carrying a metal stretcher. It was very hot and muggy, and we were in water above our knees. It was worse than being in a hot oven.

Every now and then, we would pass live electrical wires sparking off the water and bulkhead. As long as the wires were on our side and we did not go between two of them, we were supposedly safe. In water up to my knees, carrying a metal stretcher, with live electrical wires sparking around, and unable to see – I was not too confident.

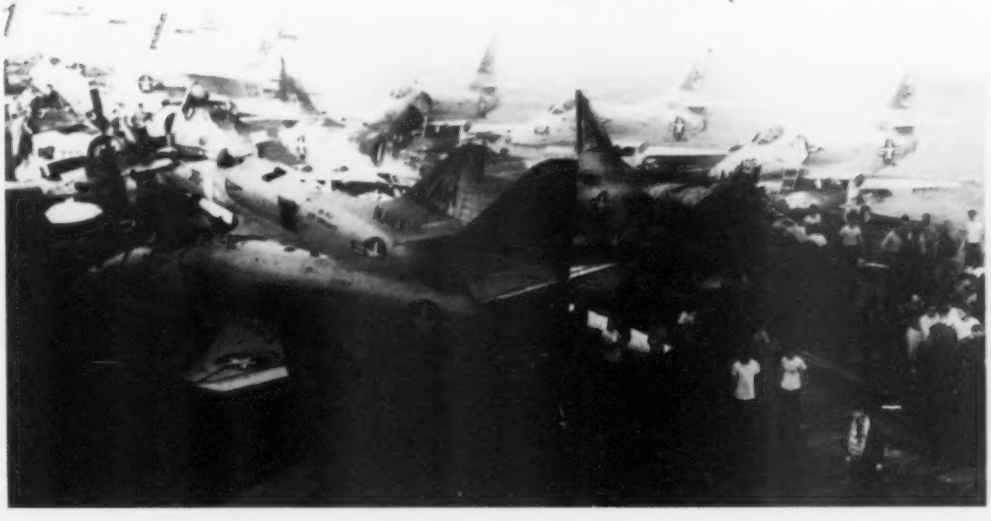
We found the stateroom of one of the missing officers. At first we thought no one was there but looking more closely, we found a lump of something we realized had been a man. The heat had been so intense he had melted into an unidentifiable heap. His dentures could not even identify him. (The process of elimination later identified him.)

I helped carry out a man whom I did not think I knew. I thought he was black. He turned out to be a good friend whom I had flown with many times. The fire had charred his skin and singed his hair. Only when we rolled him over and I saw his unburned side did I know who it was. This same pilot had survived two ejections earlier in the cruise.

In one of the VF ready rooms, the SDO received a call from some of his shipmates who were trapped in their stateroom on the third deck. He told them that all the rescue teams were very busy and that they would have to find their own way out. Shortly thereafter, there was a loud, horrible noise that sounded like uncontrollable screaming over the phone, then it suddenly went dead. We didn't know if it was the sound of the men being burned to death or a strange sound made by the phone lines as the wires melted. It made the hair on the back on every man's neck in that ready room stand on end. One man out of eight did escape from that room.

As a couple of the men succumbed, an LSO from VF-111 decided he was not going die this way and busted out of the room. He raced to the ladder that took him to the second deck. As he was running blindly across the deck he passed out from the smoke. Falling to the floor, he regained consciousness, breathing the smoke-free air close to the deck.

Getting to his feet, he again started running across the deck to the port side of the ship. Passing out again, he fell down a ladder to the third deck. At the bottom of the ladder, he accidentally slammed into the stateroom door of one of his shipmates, who had been able to sleep through all the previous commotion. The loud bang against his door woke him up.



A view of the flight deck shows A-4Es of VA-163 and VA-164. The ejection seat of the Scooter on the far right was cooked off, but hit the canopy, which melted from the fire's intense heat.

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As he opened the door, he saw his friend and realized the dangerous situation. Throwing his unconscious shipmate over his shoulder he carried him to the safety of the flight deck. They had saved each other's lives.

Over on the port side of the ship, the helicopter crew was directing a fire crew on the flight deck where to lower a fire hose to an open porthole a few decks down. A pilot from one of the VA squadrons was in this stateroom. As he had tried to exit his room, he was met with huge balls of flames. He tried to escape a couple of times to no avail. He stuck his head out the porthole to breathe and to put the fire hose that had been lowered to him over his shoulder, spraying down his back, while his stateroom burned around him. The only injury he received was a bruised knee caused by him banging it against the bulkhead trying to escape the heat.

A man was trapped in one compartment when the water used to fight the fire was flooding it. The lights were out and it was pitch black. As the water rose, the man shimmied up a pipe in the corner of the room to escape the rising water and to breathe. He stayed in this dark, torturous situation for hours before he was rescued. He suffered psychological trauma, but later recovered.

As the fire started, many officers and men burrowed deep into the ship, which was the smart thing to do during a fire. [*While this opinion may have been in vogue at the time, today the Navy tells people to don emergency escape breathing devices (EEBDs) and egress to a clear area above and outside the ship, such as the hangar bay or flight deck. –Ed.*]

Three officers were crawling along in the dark. One of them reached back to help an injured shipmate, pulling him by the arm. As he pulled, most of the second man's burned arm came off in his hand. They reached safety but the severely burned officer died two days later from complications.

Some time during my roaming around the ship, to my surprise I came across the Sailor who had come to my stateroom. I had not expected to see him alive again. I asked him what happened after he left my stateroom and how he got out. He had tripped over the body of an officer who lived across the hall, which is why he disappeared so fast. He checked the downed officer to confirm he was dead and then proceeded to the end of the passageway to a compartment where some of his friends worked. As it turned out they had already evacuated the area and he did likewise.

During the fire, we received a lot of help and supplies from other carriers and ships that were on the line. And after what seemed like a very long time, the fire was under control and eventually put out completely. We headed for port in the Philippines. En route, we had a burial-at-sea ceremony. That was tough. It still raises goose bumps. The trip to the Philippines was very somber. The smell of death and burned flesh was inescapable.

Two things were of the highest priority upon reaching the Philippines. One was to call home to let family and loved ones know you were alive. The next was to get a room at the BOQ to get away from the ship, the stench, and some of the immediate reminders. The first I did, but I was too slow for the second. All the rooms were taken at Cubi Point, Subic Bay, Clark Field, everywhere. I was stuck aboard ship. Luckily, this only lasted a few days and we were soon on a "Magic Carpet" flight home.

Oriskany made it home a couple of weeks later. She entered dry dock and underwent rework, clean-up and was returned to service. I was surprised at how fast it had been done. But when she returned to Vietnam, I was not on board. My next cruise was in USS *Intrepid* (CVS-11), and I took my lucky black towel with me.

All Air Wing 16's squadrons suffered casualties and deaths. This photo shows the officers and pilots of VF-111, one of three F-8 squadrons on board. Four of these aviators died in the fire.

Cdr. Coltrin flew three combat tours as a reconnaissance pilot and fighter pilot in Vietnam. After serving as a project pilot at China Lake, he was a TAR in the VFP program at NAF Washington.

Doing the Travis Sidestep

by Lt. Bert Freytes

We were on a visual approach to Travis AFB, cleared number 2 for a full stop behind a C-5. The heavy transport was on ILS to the left parallel runway; it would have to sidestep to the right for the option because the left was closed for repairs.

As the Galaxy started its sidestep to the right, our separation was about six miles. I wasn't comfortable with our spacing because of his wake turbulence. I considered a 360, but dismissed the idea when we got the current winds. With an 11-knot crosswind and the six miles spacing, we all agreed the wind would blow his vortices from our flight path.

We flew through the first bumps at about 2.5 miles from the threshold at 1,000 feet AGL. The aircraft settled down quickly, though, and we continued.

On short final, everything was normal until the engineer called 100 feet. The aircraft began to yaw and pitch violently, plus or minus 3-6 degrees, which is bad in the E-6. (Its inboard nacelles are only 24 inches from the deck with normal strut compression.)

I shoved the throttles to the stops as everyone on the flight deck yelled to go around.

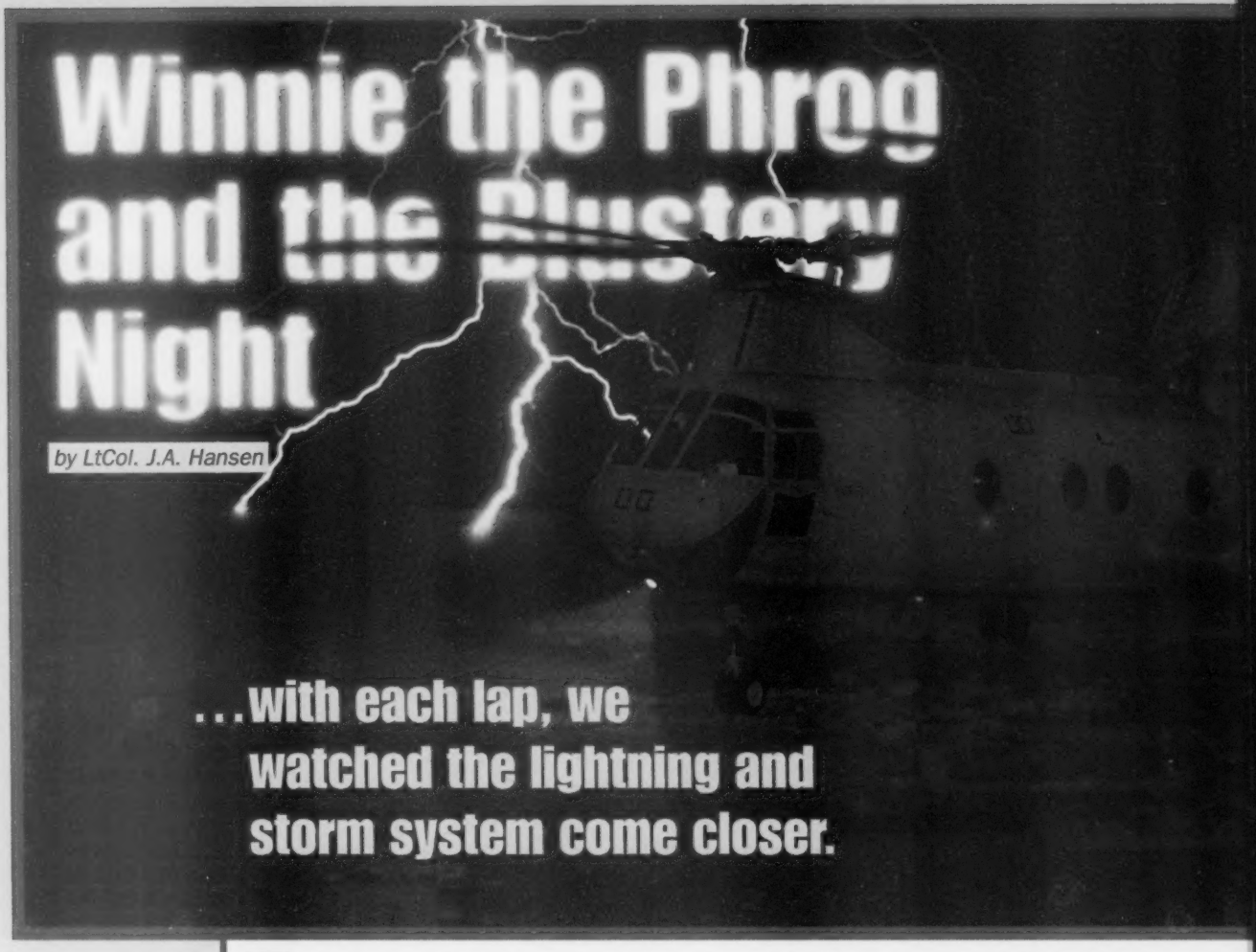
With control and plenty of thrust set, we went around. At pattern altitude, cleared for a left downwind, I retarded the throttles to keep from flying into the C-5 ahead of us.

After a brief moment of silence, I called for the landing checklist. We landed, and as we taxied back, I thought, "I guess we should have made that 360 after all."

Lt. Freytes is an aircraft commander in the E-6A with VQ-3.

Winnie the Phrog and the Blustery Night

by LtCol. J.A. Hansen



...with each lap, we watched the lightning and storm system come closer.

The following incident took place 10 years ago when I was flying Phrogs at NAS Norfolk. We were flying a HAC-to-HAC, night-fam refresher. The weather-guessers had been calling for increasingly cloudy skies, with a strong chance of thunderstorms moving into the area. As our evening progressed, so did the accuracy of their prognostication.

We had begun our flight up the James River at Felker Army Airfield and slowly retreated back toward Norfolk as the weather began to close in on us. One of the great things about East Coast flying is that you can usually keep track of the weather. Since there are no "cumulo-granite" clouds like on the West Coast, you really can't get into too much trouble (we thought).

Eventually, we found ourselves doing pattern work at the heliport as the list of available VFR airspace diminished. On each lap around the pattern, we practiced various maneuvers, and with each lap, we watched the lightning and storm system come closer. We wondered how much longer it would be before we had put our machine away for the night.

We soon got our answer as the carrier piers began to disappear in a wall of driving rain. Taking that as our clue that it was time to call it a day, we called Norfolk Tower for a heliport transition, and in moments, we landed on the runway and taxied to our line.

Our squadron was located just across from the tower, and returning to our line meant taxiing between a couple of other hangars, which was usually no big deal. This night, however, it would be different. Just as we were coming abeam the end of our hangar and moving between three other

hangars, our aircraft was caught in a sudden downpour of rain and gusting winds. Visibility went from a mile to just about zero in a matter of seconds.

As seen on our airspeed indicator, our Sea Knight was buffeted by winds gusting to 60 knots. At any moment, a gust might pick us up and toss us on our backs. We couldn't shut down; we'd almost certainly have a tunnel-strike, or worse. We couldn't taxi because we couldn't see (and the aircraft probably wouldn't have taxied forward, anyway), and we certainly didn't want to take off.

Nonetheless, you've got to have a plan, and as I was working on just exactly what it was going to be, we got a call from the ground controllers wondering if we were OK. I responded philosophically, "That all depends on how you want to define OK."

After a brief explanation about our current situation, I sat there at the controls with the wheel brakes locked, the collective held full down, and the cyclic slightly into the wind, as the torrential winds and rains pummeled us.

As we looked over the situation, I told my copilot that if we became airborne, I would pull pitch and head into the wind, making an ITO, and hopefully clear the buildings. I wasn't so sure what would happen after that. The idea of flogging around, trying to find the ground again at night, in severely restricted visibility with gusting winds and pounding rains, wasn't at all attractive. Fortunately, the situation began to improve.

Almost imperceptibly at first, the wind and the rain slowly began to subside. Gradually, I eased my death grip on the collective. Slowly, our minds began to convince our bodies that we weren't going to die that night. Eventually, we looked at each other, realizing we had just come through one of those events that could very easily have concluded in tragedy.

Our maintenance troops, sheltered inside the hangar, began to come out and, of course, the ground controllers were relieved when we called to say that all was well and that we were continuing back to our line.

Through the years, I've often thought of that night and how we sometimes allow ourselves to make decisions that don't stand up too well to the light of reason. I have also prided myself that once we had gotten into that jam, I'd had a plan (maybe not much of a plan, but a plan, nonetheless) about what I would have done had the aircraft become airborne in that storm. I had communicated that plan to my copilot. Fortunately – very fortunately – I didn't have to exercise the plan.

Not long ago, I had lunch with my former copilot, and he asked me if I remembered that blustery night nearly a decade ago. Of course I did, and I listened in agreement as he recalled the various aspects of the flight, with an appreciation that comes from sharing that same moment in time when our tails were both on the line. I was tracking right along with him to the end of his story until he said, "You know, I didn't tell you this at the time, but I wasn't at all comfortable with your plan to pull pitch if we had become airborne. I had decided that if you pulled pitch, I was going to pull back the engine-control levers."

After all these years of patting myself on the back, it turns out that we may not have understood as much about aircrew coordination as I had thought.

LtCol. Hansen is DOSS for the 4th MAW.

Photo composition by Laurinda Snipe

BRAVO ZULU

BZs require an endorsement from the nominating squadron's CO and the appropriate CAG, wing commander or MAG commander. In the case of helo dets, the CO of the ship will suffice. A 5-by-7-inch photo of the entire crew by a squadron aircraft should also accompany the BZ nomination. Please include a squadron telephone number so we can call with questions.

Kneeling:
Lt. Phil Farmer
LCdr. Gary Kreeger
Standing:
Lt. Jerry Rushing
LCdr. Joseph Kupcha
Ltjg. Mark Kelso

VAW-117

Banger 600 was returning to USS *Kitty Hawk* (CV 63) after a three-hour night mission for Operation Southern Watch. Then-LCdr. Kupcha, the CAPC, was at the controls. As he descended through 25,000 feet, he noticed the elevator controls were stiff. LCdr. Kupcha told his crew about the problem while he and Lt. Farmer (copilot) did the NATOPS procedures. Back in the tube, LCdr. Kreeger (mission commander), Lt. Rushing (RO), and Ltjg. Kelso (ACO) secured the weapons system, stowed loose gear, and prepared for recovery.

LCdr. Kreeger told the tower of the problem. After a detailed controllability check, the crew determined they could bring the crippled Hummer aboard.

As the two pilots completed the landing checklist, the CIC crew coordinated a ready deck. LCdr. Kupcha made his approach through vertigo-inducing cloud layers to an OK underlined 3-wire.

Postflight inspection revealed that acoustic insulation had slipped beneath the floorboards and was binding the elevator's flight-control linkages. Technicians later estimated it took approximately 80 pounds of force to move the elevator controls in flight. This incident resulted in a critical, safety-of-flight hazard report. This hazrep led to an AIRPAC-directed one-time inspection of all E-2Cs and a Naval Aviation Systems Command airframes bulletin.

Maj. Lamont Rhondeau

VT-19

Maj. Rhondeau was flying an FCF after maintainers adjusted the rudder trim on a T-2C. The corrective maintenance was necessary because, after an out-of-control syllabus maneuver, the aircraft would not recover from a spin, hands-off. Maj. Rhondeau completed the "C" profile and started testing the spin characteristics of the T-2.

After entering the spin at FL 270, the aircraft went into a flat spin at approximately 1.5 times the normal rotation rate. Passing FL 250, the pilot applied normal spin-recovery control inputs with no effect. At FL 210, he applied aileron into the direction of the spin, again with no effect.

Descending through 16,000 feet, Maj. Rhondeau used full forward stick and tried running the trim full nose-up and nose-down to break the spin. Passing 13,000 feet, he applied MRT on the inboard engine. At 11,000 feet, the aircraft shuddered and began recovering by 9,500 feet. Full recovery occurred at about 7,000 feet, the NATOPS limit for out-of-control flight.

An EI revealed numerous discrepancies in the flight-control rigging.

1stLt. Gary Allison
Capt. Thomas Jackson

HMT-303

While conducting an early stage FAM at MCAS Camp Pendleton, 1stLt. Allison (pilot under instruction) began a straight-in autorotation by rolling the throttles to flight-idle. At 300 feet AGL, he advanced the throttles slightly to verify rpm (Np) response. Immediately, the No. 2 Np, torque, and measured-gas temperature fell toward zero.

Quickly determining that the engine had flamed out, Capt. Jackson (IP) took control and continued the autorotation. At 100 feet AGL, he flared and advanced the No. 1 engine to full open. Approaching the ground, he leveled off and made a single-engine slide-on, with no damage to the aircraft.

AE2 Thomas Wells
Lt. Clifford Keeney
Lt. Robert Weissenfels
AD3 Michael York

HC-6

This crew was returning to USS *Supply* after transferring passengers on their second hop of the day. The Sea Knight's No. 1 engine lost power as torque, T5, and Ng dropped to zero. Lt. Keeney (PAC) did the single-engine procedures as he slowed to single-engine airspeed, trading off velocity for altitude.

He called for the ditching checklist and told the ship, which immediately turned toward the stricken CH-46. Lt. Weissenfels (HAC) could not restart the engine. Then-ADAN York (crew chief) positioned himself in the tunnel to help monitor fuel dumping. The crew called for best winds at 30 to 40 degrees to port. At 10 miles, the ship was ready and waiting, and the crew secured fuel dumps at 600 pounds per side. The HAC took control for the approach to the single-spot deck.

As then-AD3 Wells (second crewman) prepared the cabin for ditching, Lt. Weissenfels made a single-engine landing as Lt. Keeney backed him up with airspeed, altitude, and Nr calls.

Waiting for the

It was a beautiful day – sunny, no clouds, unrestricted visibility, smooth blue water, and a bag-ex with 26 knots of wind over the deck. And I was not flying. We were near the end of a 52-day, at-sea period, and this was our last fly day before pulling into port. Morale was high, but since the previous day was no-fly, I suspected people on the flight deck might not be as focused as they should be.

It wasn't my day to be the air wing safety duty officer (AWSDO), but as the squadron safety officer, I decided to observe flight ops, anyway. AWSDO rotates among the wing's safety officers and reports to CAG at the end of each day on how things went. They watch deck operations and help ship's company take care of problems immediately. However, the AWSDO tour is sometimes a chance for the flight-deck crew to save him from certain death.

I had done this watch about 15 times during the last five months, and I felt I knew where to stand to see the most activity and still stay out of harm's way. The position I favored was about two-thirds up the starboard side, just aft the nav pole. This area is roughly the same frame as the end of the angle deck and slightly forward of the in-tension point for aircraft on catapults 1 and 2.

I liked this position because it gave me a view of launches from all four catapults, as well as a good view aft and slightly forward. It was clear of the landing and de-arm areas but still let me see the taxi areas after landing, except for aircraft taxiing

Cable

by LCdr. John Williams

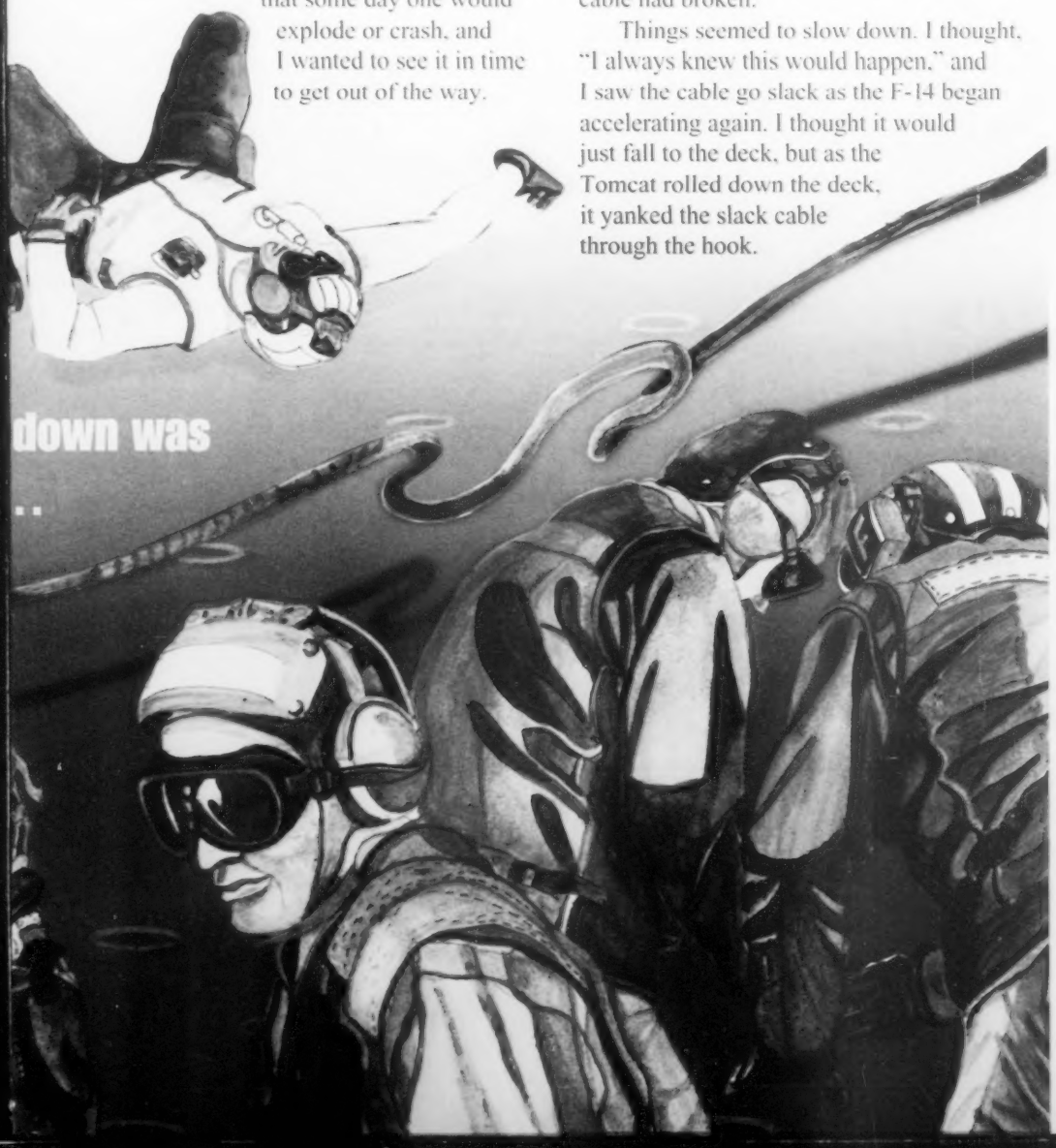
all the way forward. This setup gave me an excuse to walk all the way to the bow.

I had just come on deck behind the island, and I was standing at the inboard forward edge of elevator 2. There were several planes stacked behind catapult 1, which kept me from reaching my favorite spot. When near the landing area, I always watched planes land because I expected that some day one would explode or crash, and I wanted to see it in time to get out of the way.

On my previous cruise, we had a ramp strike, and that's how one sage flight-deck chief told me he avoided the wreckage.

As I stood there watching an F-14 land, I was ready and not surprised when the cable snapped. I saw the turnbuckle fly forward as the big jet stopped its deceleration halfway through the roll out. I thought the turnbuckle had failed, but later, I saw the purchase cable had broken.

Things seemed to slow down. I thought, "I always knew this would happen," and I saw the cable go slack as the F-14 began accelerating again. I thought it would just fall to the deck, but as the Tomcat rolled down the deck, it yanked the slack cable through the hook.



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The first man
a yellowshirt

Cable

by LCdr. John Williams

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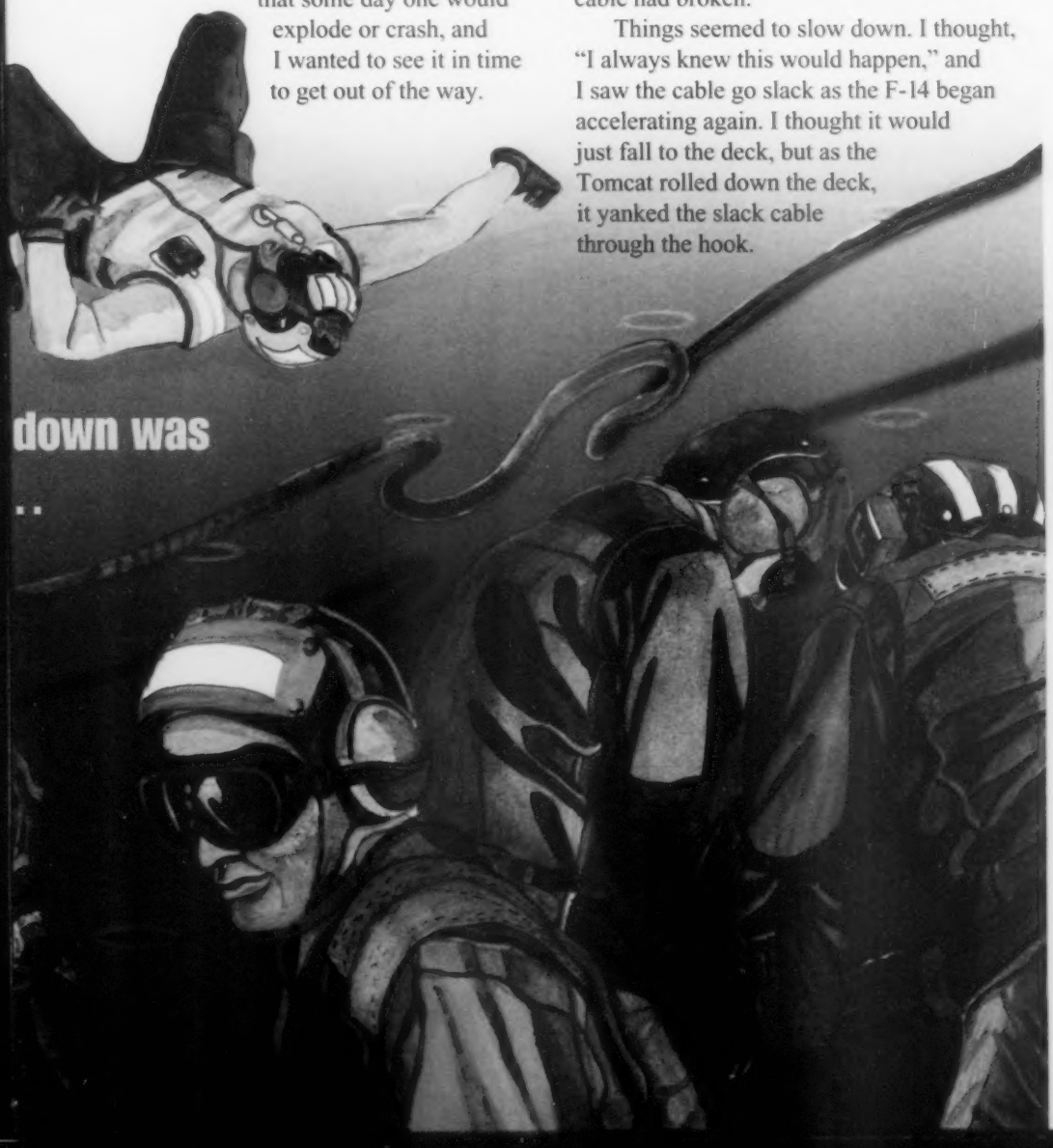


down was

..

As the bitter end pulled through, the entire cable flashed across the deck like a giant whip.

I never knew something with that mass, which I was so used to seeing stretched harmlessly across the deck, could rush at me with such speed.

The first man down was a yellowshirt at the edge of the landing area, the guy who signals you to clear the angle after you trap. He never knew what hit him, and I didn't even see it. The cable slid toward me like some huge sidewinder.

I thought, "OK, let's do it." I waited for what seemed like several seconds, crouched down a little, and when the cable came near enough, I jumped over it. It was about a foot off the deck. As I jumped, I watched half a dozen guys around me get knocked over like bowling pins. Some of them saw it at the last minute and tried unsuccessfully to jump. The cable continued past me, wrapped part-way around an A-6 tied down on elevator 2, and the frayed end flipped over the starboard side.

The Boss called a medical emergency, and the corpsmen arrived immediately. I checked the men who were down around me. They all seemed fine (for people who have been bowled over by a giant cable). Some were even limping around. The yellowshirt appeared to be unconscious and had to be taken below on a stretcher. I thought we were lucky no one had been killed. My image of such a mishap had always included a cable that was waist-high, with me diving over at the last second. What I didn't know then was that the turnbuckle had continued forward at 150 knots and gone through one deck crewman and one aircraft on the four row. That crewman died instantly.

Members of the squadron line crew were working right next to the deck chief when he was killed. Several of these asked to be removed from the flight deck after the accident. I had been involved in the plane-captain boards for the entire cruise. Each candidate was well-prepared and liked the deck because it was exciting and dynamic. We constantly preach about the dangers of the flight deck, but how many people actually listen? Most of our line personnel are very young and subject to the "immortality syndrome", so how do we convince them that the dangers are real? We talk about "keeping your head on a swivel," but how many recoveries take place before we casually disregard this awesome movement of metal because it is a common occurrence?

As I jumped, I watched half a dozen guys around me get knocked over like bowling pins.

None of the people standing near me was even paying attention. They were involved with their jobs, certain that the jet would stop, and the cable would retract as it had done for months.

Each jet that lands and takes off has the potential for disaster, and no matter what we're doing on the flight deck, we need to keep one eye open, ready for an accident. I won't be standing any more AWSDO watches; the cruise is over, and I'm due to rotate jobs soon. But I feel that I'm much more aware of flight-deck hazards. When I'm not in a jet, I get below as quickly as possible, and when I'm on the flight deck I'm waiting – waiting for the ramp strike, the crash, the explosion, or the cable.

LCdr. Williams flies with VFA-146.

POP-UPS

- Bird $trikes and Deer $trike
- Check for Birds Under BASH on the BBS
- Five-Year, $500 Million Safety Program
- X-Large Helmet Headaches
- Send Us Your ORM Success Stories
- 1996 Grampaw Pettibone Award
- New Firefighting Vehicles
- Polar Turnover
- Lessons Learned on CALL

Bird Bucks

Bird strikes cost the Navy $70,664,258 from March 1995 to March 1997.

4	FA-18	$31,413,164
2	AV-8	19,304,745
1	T-45	18,855,000
1	E-2C	684,534
1	AH-1W	190,265
2	F-14	96,560
1	TA-4	69,850
1	T-2	50,140

A deer strike on a T-44A on the runway in February also cost $48,068.

Bird Brief

What risk-assessment tools does your air wing and squadron use to manage and lower the risk of bird strikes? Do you have a brief sheet that outlines when risks are the highest?

LCdr. Laverne Stella, the air-operations facilities branch head at the Naval Safety Center, has a few suggestions. To help identify when birds may be a hazard to you in your operating area, contact the local NAVFACENGCOM field division. The Department of Interior Fish and Wildlife Office of bird migration can also help. Lastly, check the Naval Safety Center's BBS at (757) 444-7927, DSN 564-7927 (look under BASH).

NASA-Langley to Emphasize Flight Safety

NASA has picked its Langley Research Center in Hampton, Va., to lead a $500 million, five-year program to make flying safer. It has targeted air safety as a top strategic priority.

This broad-based program will involve the Federal Aviation Administration, Department of Defense, the private sector and three NASA field installations. The NASA Langley staff will do research and coordinate efforts of the other organizations. NASA Langley is located 10 miles from the Naval Safety Center.

Big Guys Wear Tight Helmets

A shortage of HGU-67/P helmets has 4th MAW looking for a remedy. Some Marine aircrew are flying with helmets that don't fit, which could be a hazard in an emergency.

ECP E-4631-97-14 has been drafted and is awaiting funding. Converting the HGU-84/P to the HGU-67/P, as outlined in the ECP, will make more helmets available in the supply system and add one more helmet size (X-large wide) that is not currently available to Cobra aircrew.

ORM Feedback

Operational Risk Management is an invaluable tool for controlling hazards in the Navy and Marine Corps. Its application is instrumental to how we do business and inevitably could affect every aspect of military life, both on- and off-duty. The CNO and CMC signed their ORM instruction, OPNAVINST 3500.39 and MCO 3500.27, on April 3, 1997. We'd like to hear your ORM success stories. How are you using the principles of ORM to reduce risks to an acceptable level? Do you have any lessons learned? We're interested in how you use ORM to adjust or cancel missions, or to help people devise innovative controls. Tell us if you have gone beyond the operational arena (e.g. recreational activities, off-duty events, etc.).

We want to get the word out, and the feedback from your experiences may help others. Please send your inputs to the *Approach* Editor, Code 71, LCdr. Mark Enderson (757) 444-3520 Ext. 7245 (DSN 564), or e-mail: menderso@safecen.navy.mil

Pettibone Award Winners

Lt. Billy R. Carter of HSL-42 won the individual Grampaw Pettibone Award for 1996 while HSL-42 won the unit award. The awards go to the individual and organization contributing the most toward aviation-safety awareness through publications.

Navy Orders Firefighting Vehicles

The Navy has awarded a $8.2 million contract for 50 P-25 firefighting vehicles to Entwistle Co., Hudson, Mass. Delivery to the fleet will begin next year. Three vehicles will go to each aircraft carrier and the rest to L-class ships.

Navy to Vacate Antarctica

Since Adm. Richard Byrd's historic flight to the South Pole in 1929, the Navy has led the way in opening Antarctica for scientific exploration and safe travel over its polar regions. With its mission complete, the Navy will formally turn over responsibility for logistic support of the U.S. Antarctic Program to the U.S. Air Force in a ceremony on February 21, 1998, at Christchurch, New Zealand.

The Navy will hold another ceremony on March 12, 1998, at the Naval Construction Battalion Center at Port Hueneme, Calif. This ceremony will formally disestablish the U.S. Naval Support Force, Antarctica, after 42 years of expeditionary and logistic support on the world's most southern continent.

Lessons Learned on WWW

The Combined Automated Lessons Learned (CALL) Information Center, operated and managed by the Naval Air Warfare Center Aircraft Division (Systems Engineering Department 4.1) at NAS Patuxent River, is now available on the World Wide Web.

CALL hosts the Navy, Air Force and Federal Aviation Administration lessons-learned infobases. It also provides links to Army and NASA programs.

CALL's homepage can be found at http://www.nawcad.navy.mil/call. At the homepage, click on the Access Info button and follow the instructions to access more than 5,000 documented lessons learned.

Edited by Bud Baer. Contributors can contact him at (757) 444-3520, Ext. 7246 (DSN 564).

Milestones

Class A mishap-free flight hours

Command	Date	Hours	Years
VAW-113	04/29/97	60,000	30
HMLA-369	05/27/97	35,000	6
NTSU Oklahoma	06/01/97	10,500	9
VP-45	06/02/97	179,000	28
HSL-41	06/02/97	85,000	14.4
HMM-263	06/02/97	40,000	9.5
VS-21	06/05/97	27,200	9
VP-30	06/09/97	321,000	33
HS-10	06/15/97	17,000	4
VAQ-141	06/29/97	6,700	3
VAW-112	07/01/97	52,000	24
VPU-2	07/01/97	36,900	15
VAQ-132	07/05/97	44,990	27
VQ-1	07/10/97	61,000	10
VFA-147	07/12/97	27,650	6

Class A Mishaps

The Navy and Marine Corps had 18 Class A flight and flight-related mishaps before 20 April in FY97. The following mishaps occurred since 10 May:

Aircraft	Date	Command	Fatalities
CH-46E	05/10/97	HMM-164	4

Aircraft struck the water during a deck-landing-qualification flight at night.

AH-1W	05/23/97	HMLA-167	2

Aircraft crashed approximately 20 minutes after takeoff.

AH-1W	07/27/97	HMM-263	2

Aircraft crashed into water while returning to ship.

Class A Flight Mishap Rate

	FY97* thru 7/31/97 No.	Rate	FY96 thru 7/31/96 No.	Rate
Navy/Marine	21	1.79	30	2.37
All Navy	11	1.21	19	1.98
All Marine	10	3.79	11	3.57
NAVAIRLANT	4	1.69	4	1.52
NAVAIRPAC	3	1.29	9	3.40
MARFORLANT	4	5.16	6	5.86
MARFORPAC	6	4.72	4	2.74
NATRACOM	4	1.44	2	0.77
NAVAIRES	0	0.00	3	3.14
4th MAW	0	0.00	1	2.99
NAVAIRSYSCOM	0	0.00	1	4.45
Non-MARFOR	0	0.00	0	0.00
Non-TYCOM	0	0.00	0	0.00

*FY97 data subject to change.

Tear out this insert!
Post this newsletter until it's old news.

Printed as a supplement to *Approach* by
Commander, Naval Safety Center
Data: Dr. Michael S. Borowsky
Design and layout: Laurinda Minke
Visit our web site at:
http://www.norfolk.navy.mil/safecen/
For questions or comments, call LCdr. Enderson
(757) 444-3520 ext. 7245 (DSN 564)

For the first six months of 1997, the *Navy and Marine Corps reported 18 mishaps* involving bird strikes. Here are a few: *A T-45 encountered a flock of sea gulls* on the takeoff roll. Feeling several hits, the pilot aborted. *A Hornet took a large bird down* the port engine just after liftoff, and the pilot made a single-engine arrestment. *Flying at* 500 feet AGL and 120 KIAS, *a Sea Knight pilot* tried unsuccessfully to *avoid a 7-pound loon.* The bird went through the center windscreen.

Pacific flyway *Central flyw*

U.S. Fish and Wildlife Service

by Charles D. Lovell

ucks,
only fi
birds po
and daily fe
the aircraft st
use information about
training flights during lo
Migration- Ninety p
ever, migratory water
migration, waterfowl f
the flight, the higher t

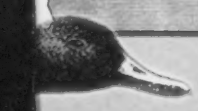
The fall and spring a
migrate. Fall migration
to move in large flocks
slower and more irregu
August and run into De
through May. Peak mor

Many factors influen
ence migration the mo
deplete their food sup
magnitude of migration
major weather fronts t

Waterfowl tend to f
migrate mainly at night
their wintering ground

Mississippi flyway

Atlantic flyway



Where the Birds Are

geese and swans, collectively known as waterfowl, account for
ve percent of the bird strikes to USAF aircraft, but these large
se a substantial threat to military aircraft during migration periods
eding flights. The USAF lost an E-3 AWACS and 24 crewmen after
ruck Canada geese at Elmendorf AFB in September 1995. If you
vaterfowl migration, movement and activity patterns to schedule
w-risk periods, you can reduce the risk of waterfowl strikes.
rcent of migratory flights occur below 5,000 feet MSL; how-
fowl have been reported as high as 20,000 feet MSL. During
y at altitudes that depend on terrain and distance (the longer
ıe altitude).

e the two peak periods during which North American waterfowl
s far more noticeable than spring migration. Fall migrations tend
to wintering areas in a short time, whereas spring migrations are
lar. Depending upon latitude, fall migrations may begin as early as
cember; spring migrations may begin as early as February and run
ıths of migration are October-November and March-April.

ce migration; changes in the amount of daylight probably influ-
t. If food is plentiful, many species will delay migration until they
ıply. Also, weather conditions influence the onset, delay, and
s. Large-scale migrations, especially in the fall, often coincide with
ıat produce favorable wind patterns.

eed and build up fat reserves for migration during the day and to
. Many species will fly directly from their breeding grounds to
ds, while others will periodically stop to feed between their breeding and wintering grounds. For example, snow geese migrate both non-stop from Hudson Bay to the gulf coast of Texas, and on occasion, stop to replenish fat reserves to continue their flight.

There are four major migratory flyways in North America – Atlantic, Mississippi, Central, and Pacific. Results from the 1996 midwinter waterfowl survey conducted by state wildlife agencies and the U.S. Fish and Wildlife Service tallied more than 27 million waterfowl in the U.S.

The Mississippi flyway contained the largest number of birds (11 million), followed by the Pacific (6.5 million), Central (5 million), and Atlantic (3 million). Most of these migratory waterfowl winter in national and state wildlife refuges in southern and coastal states where water doesn't freeze. In coastal areas, large "rafts" of sea ducks and other waterfowl species will gather in bays, like the Chesapeake Bay, and along the coast.

Movement and Feeding Flights- During the winter, waterfowl rest in areas in which they feel safe from danger. They start flying at dawn to search for food. Once the birds find it, they will spend most of the day feeding at that location. As the sun sets, they again take to the sky to return to a safe roosting area. In general, birds fly below 1,000 feet AGL to and from food sources.

Avoiding Waterfowl Strikes- Because weather patterns vary, there is no set day when migrations start. It helps to keep in close contact with refuge or state biologists about the status of migratory waterfowl in areas where low-level flights occur. These biologists often provide specific information about daily waterfowl-flight patterns between roosting and feeding areas. This information helps determine the specific start or end of migrations for a particular year, and aids in scheduling flight-training missions and avoiding bird strikes.

Mr. Lovell is a wildlife research biologist with the National Wildlife Research Center in Sandusky, Ohio.

Lessons Learned

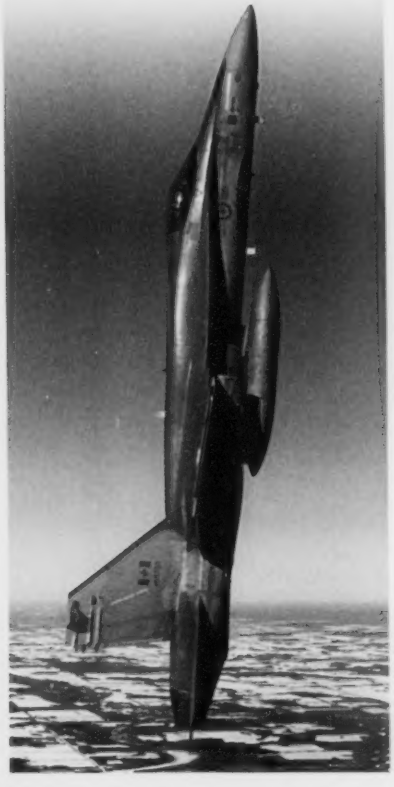
There are two ways to get smart. One is through experience – we call this "the hard way." The other is to learn through others' experiences. The second method is much easier on our machines and bodies.

Beware of That Seat-of-the-Pants Feeling

by Capt. Jeff Jaques, Canadian Air Force

Dash 2 was an FA-18 pilot doing 1 v 1 ACM against his lead (Dash 1). During the final engagement, Dash 2 thought he had energy and a position advantage over Dash 1. Actually, lead was outmaneuvering him.

Dash 1 had effectively forced Dash 2 into a low-altitude, slow-speed situation and figured he could safely maneuver in the vertical to get into weapons parameters. Dash 1 thought Dash 2 was too slow and would not be able to follow him.



McDonnel Douglas Corp.

Unfortunately, Dash 2 reasoned differently. Without checking airspeed, he tried to follow Dash 1 through the vertical maneuver. Dash 2 maneuvered too aggressively, pulling too much G for the low-energy state of his aircraft, which quickly cost him more airspeed.

Shortly into the maneuver, the aircraft's departure tone (alpha tone) sounded, but Dash 2 failed to respond. The Hornet departed and initially showed signs of post-stall gyrations. Dash 2 felt strong side forces and negative G's. He reacted to the departure indications by releasing the controls, the first step of the NATOPS departure-recovery procedure. The aircraft immediately responded and recovered from the departure but entered an inverted, nose-low dive.

The dive caused negative-G forces. Dash 2 assumed the aircraft was still out of control. He failed to complete the remaining steps of the departure procedure. Had he done so, the flight instruments and the absence of the departure tones would have told him that the aircraft was not out of control.

Without checking this critical information, Dash 2 ejected from a flyable aircraft when he passed below the departure-ejection altitude.

Lessons Learned:

1. Don't try slow-speed, vertical maneuvers without checking the airspeed indicator. If you don't know your airspeed, you can't determine the maneuvers that you can do and the type of control-stick inputs you need to complete the maneuver. Hornet drivers are taught the 10-percent rule for vertical maneuvers (maximum G cannot exceed 10 percent of the aircraft's airspeed). If you don't follow this rule and apply excess G, you probably won't be able to complete the full vertical maneuver.
2. Know the indicators of impending departure. The Hornet should not depart without first providing stall warning. The alpha tone and yaw-rate tone are excellent warnings to reduce AOA or yaw. If you ignore them and continue maneuvering aggressively, the aircraft will probably depart or, at least, will not respond to control inputs.
3. Understand the indicators of recovery. Don't be misled by poor assumptions. Adverse forces on their own are not indications of departure. Negative-G forces led Dash 2 into believing he couldn't recover. Actually, the aircraft had fully recovered long before the pilot ejected.
4. Know your boldface procedures and be prepared to go through them even when experiencing negative G's. The departure recovery procedure has to be treated like instrument flight; i.e., you have to be on the dials. Release the controls, check the performance instruments, and recover in accordance with NATOPS procedures. G forces may be uncomfortable and make you apprehensive, but they alone give no indication of departure or recovery. Numerous situations can occur when the pilot should not be influenced by seat-of-the-pants feelings, and dynamic in-flight departure is one of them.

Capt. Jaques is an analyst at the Naval Safety Center for the FA-18, F-5 and T-38. He is on exchange duty from the Canadian Air Force.

I Wonder if That

by Lt. Rodney Ivarsen

I looked back in surprise as a large hand grabbed my shoulder and yanked me. The hand was attached to an angry yellowshirt, who was pointing to the intake of an S-3B I was about to walk in front of. I looked around and realized 10 people were staring at me wondering what the heck I was doing walking in front of a turning Hoover. I wondered the same thing. How had I gotten into this situation?

This flight was to be my fourth night carrier launch after graduating from the Prowler FRS and meeting my new squadron on cruise three weeks earlier. The flight was supposed to be a routine ESM mission around the ship. Everyone else in the crew was salty and on their second cruise; I was looking forward to learning more about carrier ops from this experienced group.

The brief went well, and the other backseat ECMO and I got together and came up with a game plan to tackle the events for the evening. I was a little behind the rest of the crew and ended up walking late. When I reached maintenance control to read the book, everyone else had headed for the jet. Reading the book, I realized the ESM game plan we had developed wouldn't work, and a quick change was going to be necessary.

Heading toward the deck, my nugget brain was churning with great ideas to get around the minor problem and fully meet all the mission goals. It was dark on the roof, and I wasn't exactly sure where on the fantail the EA-6B was parked. Not a problem, I decided, and pulled out my trusty flashlight and got back to thinking about the flight.

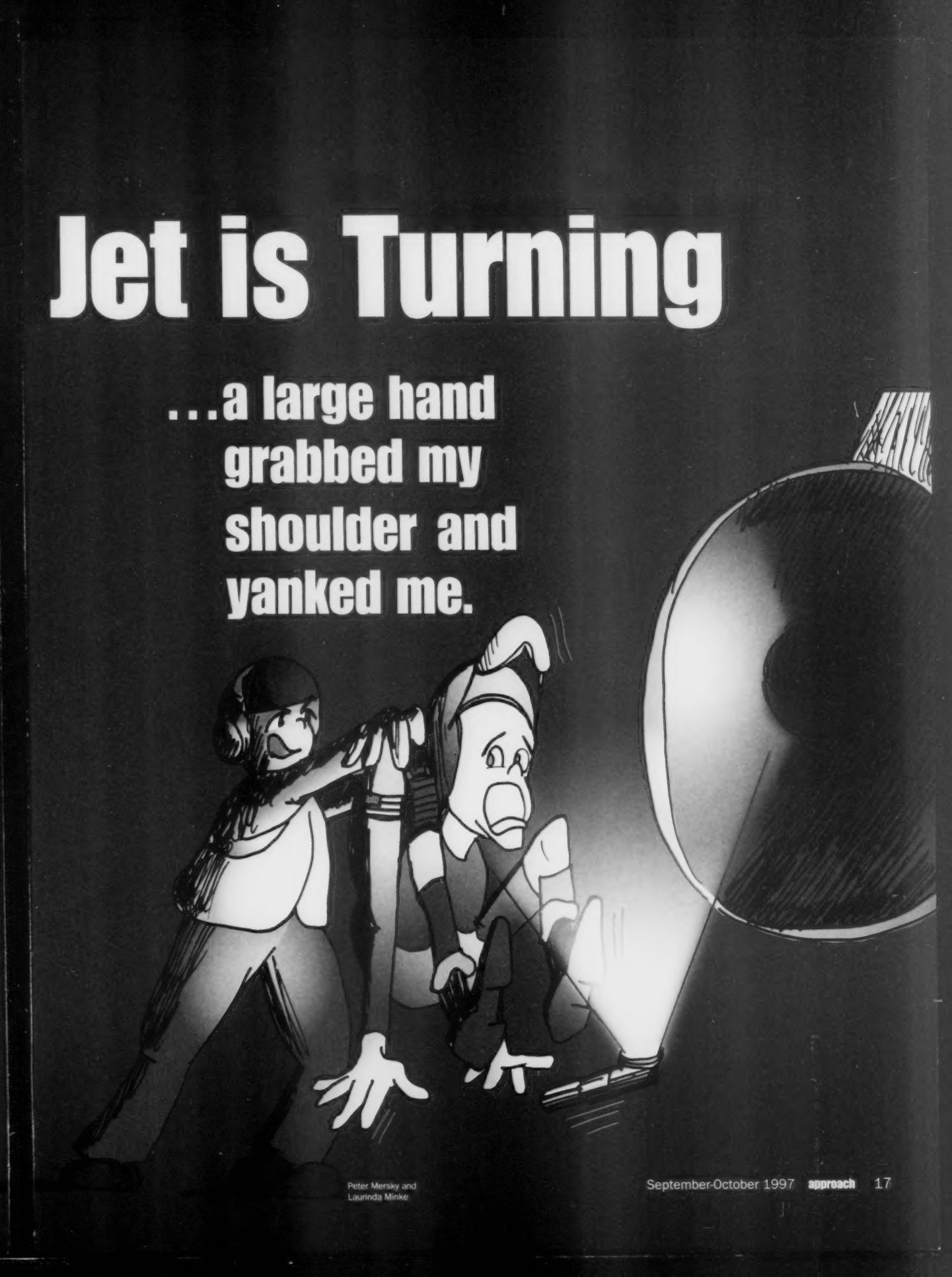
Twenty steps later, the yellowshirt was keeping me from walking in front of the biggest blender ever made. After shaking for a couple minutes, I grabbed an AT from my squadron, and he walked me safely to the jet.

What should I have done differently that night? First, it would have been a good idea to ask someone in the crew to wait for me when I realized it was getting late. They had been escorting me around the flight deck for the last few days and had told me not to go up there by myself. Second and most important, I should have never walked onto the flight deck thinking about the mission problems. The only thing going through my head should have been how to get from maintenance control to the jet. The flight deck at night is no place to solve problems.

Since that night, whenever I'm on the flight deck, my head is always on a swivel, and I'm asking, "Is that jet turning?"

Lt. Ivarsen flies with VAQ-135.

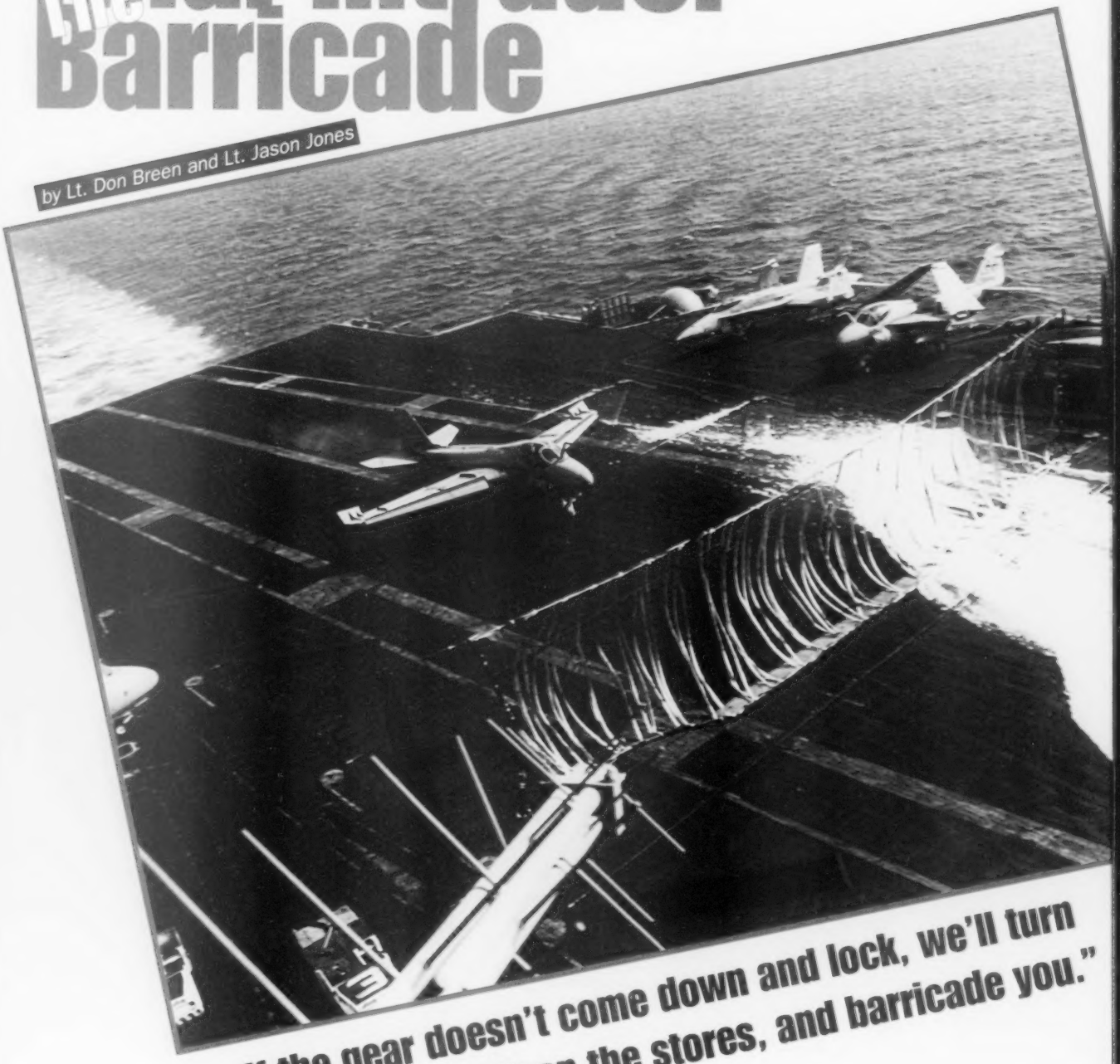
Jet is Turning



Peter Mersky and
Laurinda Minke

The Final Intruder Barricade

by Lt. Don Breen and Lt. Jason Jones



"...If the gear doesn't come down and lock, we'll turn you downwind, jettison the stores, and barricade you."

We were three months into the last deployment of the A-6E Intruder. This was my second cruise with the squadron and my BN's first. We had been operating in the Arabian Gulf for nearly three weeks and had started to settle into a rhythm. Our 0600 brief was for a triple cycle, providing SEAD coverage for an airwing escort package of two Air Force U-2 reconnaissance flights over Iraq. Our flight of two Intruders would be armed with a HARM and a single Mk-82 each.

The hop was long and uneventful, with beautiful weather the entire day. After 4.5 hours and two trips to the KC-135, we led our section overhead mom for a 1330 Case I recovery. In the break, my BN reminded me we were still 1K above max trap, and I turned on the dumps during the pull.

As our A-6 slowed to 250 knots, I lowered the gear, flaps and slats. Suddenly, we heard and felt a loud thump from the nosewheel well. I was already reaching for the switch as my BN said, "Better get those dumps off."

As we slowed on downwind, the nosegear remained barberpoled with an associated wheels-warning light, a steady gear transition light, and no indexers. I told the LSOs we had an unsafe nosegear indication and needed a visual inspection. My BN had the NATOPS PCL out before the 180 and was already assessing the situation as we rolled into the groove.

We flew a low approach to a waveoff, and the LSOs confirmed our nosegear was not fully down-and-locked. We turned downwind and headed to a VFR holding point, 10 miles aft of the ship.

After contacting the A-6 rep in the tower, we ran through the NATOPS procedures, including applying positive and negative G's and cycling the landing gear. The mains came up fine, but the nosegear remained barberpoled. It was obvious from the lack of noise and feel that the nosegear wasn't moving. We lowered the gear again with the same results.

Another Intruder joined on us and confirmed the nosegear was in a trail position, approximately 20 degrees aft of vertical. The next step would be to pneumatically blow down the gear. However, once we did that, we wouldn't be able to raise the gear again. The ship was working blue-water ops with an emergency divert of Al Jaber, Kuwait, 160 nautical miles north. We calculated dirty bingo to be 6.5, clean bingo 3.6. Our state was 6.0.

We decided that if we didn't blow the gear, we could clean up, let the nosegear hang, and make the divert easily. At the end of the checklist is a caveat that my BN casually mentioned, "You know, if we recover aboard the ship, they're gonna have to barricade us." No way that was going to happen!

By this time, our skipper was in the tower, calling us on button 14. After we reconfirmed our status, he told us to blow the gear. We reminded him that we were now more than 1,000 pounds below dirty bingo, to which he replied, "OK, let's blow the gear and go from there." Little did we know the decision to bring us aboard rather than divert us had already been made. Once again, my BN read off the NATOPS procedures as I did the steps. The nosegear still didn't move.

We told our CO, and he replied, "OK, come on in and do a touch-and-go. If the gear doesn't come down and lock, we'll turn you downwind, jettison the stores, and barricade you."

We flew a straight-in to the touch-and-go, maintaining attitude on the jet to keep the nosegear off the deck. Our state was now 4.0. With no change to the IPI, our wingman confirmed our nosegear was still trailing. We turned downwind to jettison.

Once our ordnance was off, the LSOs gave us the standard barricade brief, including the importance of lineup, airspeed and glideslope control, as well as loss of the lens in close (because of the barricade stanchion). They also covered LSO voice calls and cutting the engines. They told us we couldn't wave off late, and we would be on a 4-degree glideslope. They didn't cover that the lens was set to target the 1-wire. They told us to expect to "charlie" in five to seven minutes. We said we estimated crossing the ramp with 2.0.

Everything looked great until in-close to at-the-ramp, when the ball disappeared behind the barricade stanchion.

While setting up for the straight-in approach, we briefed our ejection criteria, when we would consider blowing the canopy, and other on-deck emergencies. We flew bullseye to a good start with approximately 750 fpm on the VSI for the 4-degree glideslope. Because of the unsafe nosegear, we had no indexers; however, the AOA gauge was working. The landing area forward of the barricade was covered with AFFF, making lineup difficult. Enough visual cues remained to allow us to make a centerline landing. We called the ball with a state of 1.8.

Everything looked great until in-close to at-the-ramp, when the ball disappeared behind the barricade stanchion. I left the throttles at what I felt was a good power-reference point. The ball was hidden from view longer than I had anticipated and once it appeared, it took a moment to re-acquire and focus on it. During this critical moment of flight, the LSO gave me a timely power call. When I re-acquired the lens, we were 1/2-ball low. We crossed the rounddown with 5 feet hook-to-ramp instead of the desired 8 feet.

Once safely across the ramp, we got the "Cut, cut, cut" call. The hook caught the 1-wire before the aircraft engaged the barricade. By maintaining the landing attitude on the jet, the nosegear stayed off the deck, swung forward during the deceleration of the arrestment and engaged the over-center joint, locking it in place. We rolled to a stop; I applied the parking brake and shut down the engines.

Postflight inspection revealed the gear-actuation rod had failed where it connects to the airframe. It broke after the mechanical up-locks released, allowing the gear to free-fall. The barricade straps caused only minor damage to the aircraft. The jet flew again just 30 days later.

We learned several new lessons that day, and revisited a lot of old ones. Crew coordination is critical. With fuel and time constraints, the aircrew must work as a team. Division of responsibilities and clear communication are the cornerstones of effective crew coordination.

The flow of information between your aircraft and the ship is also crucial. We had a proactive rep in the tower during our emergency. The rep and ship's crew were constantly informed about our situation so they could respond swiftly and efficiently.

Bingo numbers in the NATOPS don't consider a trailing nosegear. Be ready to interpolate fuel figures as the situation dictates.

Stay ahead of the ball. Flying a 4-degree glideslope in a slick jet with an extremely low fuel state requires a much lower-than-normal power setting. You will have a higher descent rate, slower engine response, and require a longer time to arrest the sink rate.

We never would have guessed while sitting in the 0600 brief that eight hours later, we would be in the barricade. Continuous training by the aircrew, the LSOs and the flight deck crew made it possible to quickly rig the barricade and recover our stricken Intruder.

Lt. Breen and Lt. Jones flew with VA-75 at the time of this incident. Lt. Breen is transitioning to the FA-18 with VMFAT-101. Lt. Jones is assigned to the Navy Recruiting Station in Phoenix.

by LCdr. Albert L. St. Clair

Decompression at 37,000 Feet

My story begins like many others: It was a clear, beautiful day, great to be flying. It better be clear for an FCF. The temperature was a brisk 35 degrees, typical for winter at Meridian. My Scooter's engine responded as one would expect on a cold day, impressing me and the new guy in the back seat.

After only 35 miles, we were approaching our level-off altitude for the obligatory engine and pressurization checks. These checks involve climbing to 37,000 feet MSL, reducing the engine power to idle, recording the engine instruments, verifying the cabin pressure (approximately 20,000 feet), and checking the jam acceleration. All the while you must maintain a constant airspeed and descend no lower than 35,000 feet. It takes good timing and, at times, a very cooperative air-traffic controller. They don't give you a lot of extra gas on these rides, not much time to waste waiting for an altitude block or repeating steps.


LCdr. Boone

Historically, you can expect two things to go wrong at 37,000 feet: an engine roll-back (out of rig) or compressor stall (high AOA, high altitude), both of which are eye-opening experiences. Neither of these is anything like what my backseater and I were about to experience.

Arriving at 37,000 feet, I began an idle decel, concentrating on maintaining airspeed (mach number), while my partner was busy annotating the data. I was consciously preparing for the potential compressor stall when, in the same instant, it got real warm, my oxygen went on full flow, and everything felt like we were in the twilight zone. I could hear my backseater in a very muffled, almost unintelligible voice, say, "Let's get the hell out of here!"

My first instinct was to check the cabin pressure: yep, 37,000 feet. (I didn't know it could read that high.) Next, I jam-accelerated the engine, with no change in cabin pressure, and told ATC we needed a lower altitude, like now.

The controller was in a good mood and cleared us to any altitude we desired. It is amazing what squawking 7700 does for those guys' attitudes.

We opted to descend right back to home field, blowing off the rest of the FCF, as both of us were feeling a little weird. We couldn't spare the mach nor the oxygen getting back to base, and we were glad when we parked and shut down.

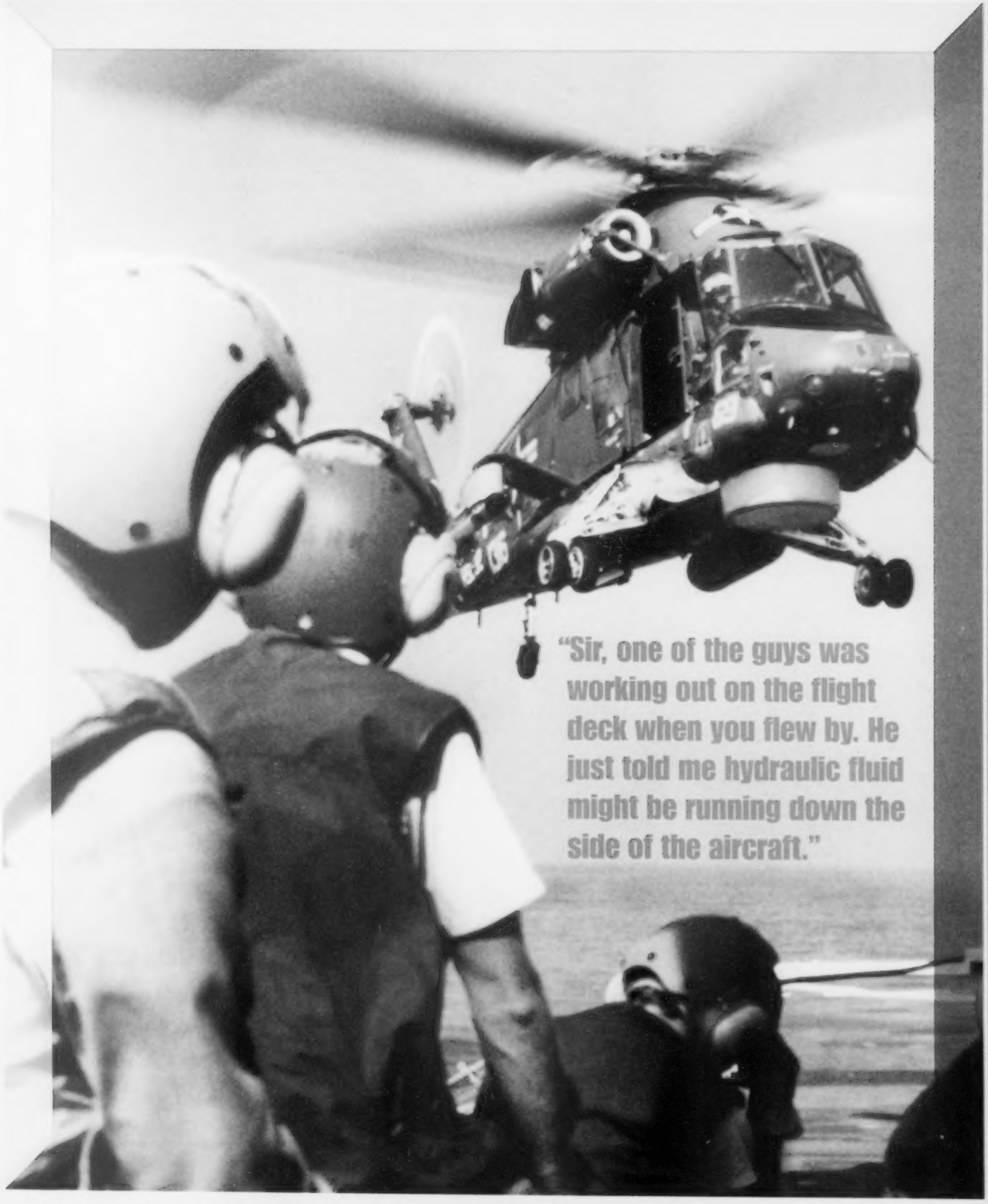
My back-seat buddy was none too happy with me for the 15 extra seconds I spent at 37,000 feet, and in retrospect, I can't blame him. I was more intent on figuring out what was wrong than with getting out of a situation not suited for the human anatomy—not to mention that it was hard to breathe and impossible to talk. You would think that as an ex-Navy diver, I would have known better. Having been both a hard-hat, mixed gas, and saturation diver, I have seen my share of decompression sickness and even treated some pilots (helo guys, of all people).

I'm very glad that somebody designed a pressure-breathing oxygen system. Our flight surgeon had a field day. Everybody started preflighting their canopy seals a lot more closely.

As for me and my backseater, we were back up there the next day, same aircraft, same altitude, but different ending.

I don't know why some people get the bends and some don't, but I'm glad that I'm in the latter group. Still, I always know where the nearest chamber is just in case; maybe you should, too. If you want to know more, contact the Naval Experimental Dive Unit (DSN 436-4351) or Navy Diving and Salvage Training Center (DSN 436-4361) in Panama City, Florida.

A former Navy diver, LCdr. St. Clair flew with VS-33. At the time of this flight, he was an A-4 instructor at NAS Meridian. He is now assigned to the Naval Advisory Group as an instructor at the Air Command and Staff College, Maxwell AFB.


"Sir, one of the guys was working out on the flight deck when you flew by. He just told me hydraulic fluid might be running down the side of the aircraft."

The Value of a Sharp Sailor and Det Chief

by Lt. Doug Blackburn

Fifteen minutes into the flight, and we were still excited about our rare good deal – a day flight in the Persian Gulf. After a quick vector south to VID a contact, we were headed north to take intel pictures, and then it was back to the ship for some day DLQs. It didn't get any better than that (still doesn't). We cruised past home plate for our crewman to take a practice photo-rig and were quickly outbound.

Shortly after the low pass, we got a call from Freddie. "Ah, 35, your det chief is up here and says he wants to talk to you."

I looked at my copilot.

"Better put him on," I replied. Whatever it was, we could not resist what had to be a LAMPS first – a det chief calling us from combat!

"Sir, one of the guys was working out on the flight deck when you flew by. He just told me hydraulic fluid might be running down the side of the aircraft."

I looked at the tiny "nickel" hydraulic gauge in front of me. Rock solid and in the green. "Chief, we have no indications here, hold on."

We slowed to let our crewman try to inspect the side of the aircraft. He told us that it could be a little wet back there, but only where the usual oil leak streamed down behind the cabin door. (It was an SH-2, and if it wasn't leaking…) We later learned that the cabin door kept him from seeing the hydraulic fluid.

"Chief," I said, "we have no indications up here, and everything seems fine."

"Just the same, sir, I'd feel a lot better if you came back and at least flew by again so I could look."

Again I looked at my copilot and knew we shared the same thought. The delay was sure to cost us our DLQs. But if the chief thought it important enough to leave the hangar, venture all the way to combat, and actually get on the radio, the least we could do was the flyby. We turned around.

A few minutes later, it happened. The nickel gauge went to zero, the controls jumped, and we got a couple of caution lights. We were suddenly boost off.

The SH-2F flew well without hydraulic power, but since the hydraulic fluid also lubricated the single hydraulic pump, getting on deck quickly became the goal. If the pump fell apart and its parts made their way into the combining gearbox, the big fan above us might stop turning.

We quickly did the EPs and checklists, then told home plate of our dilemma and intentions. The ship went to emergency flight quarters and closed us at top speed. Thirty knots was never appreciated so much. We had a green deck waiting for us, and flew a safe, if not picture-perfect, stern approach to a landing and shut down.

After a few years of reflection, I credit three things for keeping this tale from being a truly harrowing "there I was…"

The first thing was the aircrew and ship's company. My copilot (a HAC himself) and my experienced crewman were calm and collected. They did the jobs as well as anyone could. The ship's personnel stayed abreast of the situation and had a green deck and perfect winds waiting for us.

The second thing was a sharp wrench-turner on deck who kept his head up even when he was off duty. He did not ignore a suspected problem, but told the chief even though he was not positive about what he saw.

The third consideration was a great detachment chief, who listened to a junior Sailor, took his observation seriously, and was not afraid to get on the phone.

Lt. Blackburn was the HSL-34 Det 10 maintenance officer at the time of this story. He now flies with HSL-45.

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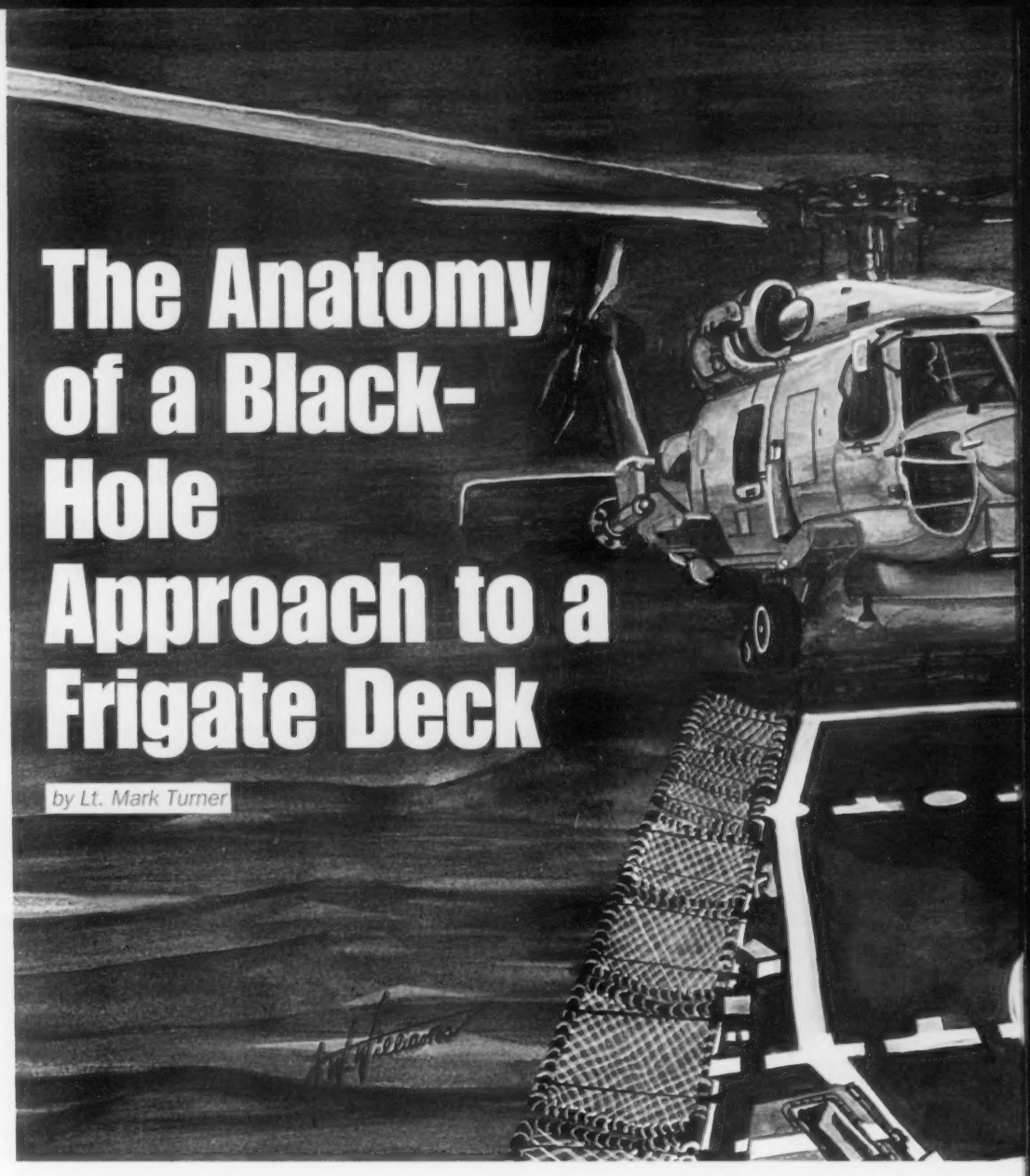


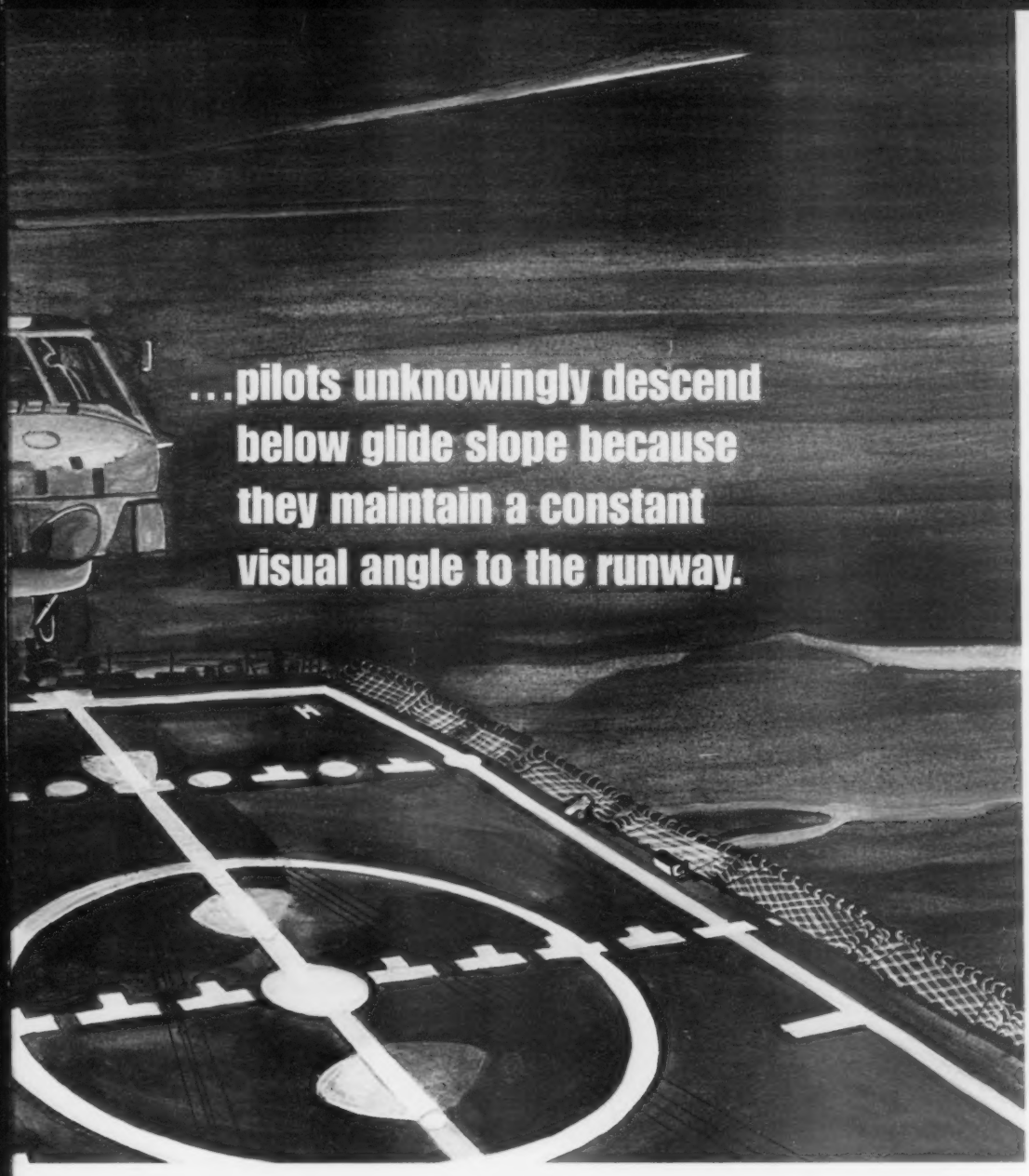
The Anatomy of a Black-Hole Approach to a Frigate Deck

by Lt. Mark Turner

The black-hole approach usually occurs at night around a quarter mile. As the pilot transitions to an outside scan from his instrument scan, he hears his copilot frantically calling for power while watching the radar altimeter decrease rapidly. The aircraft is descending into a dark, featureless void aft of the fantail known as the black hole.

As helicopter pilots, we are two-dimensional, diurnal creatures operating in a three-dimensional, nocturnal environment. Visual illusions are common at night because there are too few visual cues to satisfy the senses. Without this information, we have to search our other senses for "seat-of-the-pants" cues, while compensating with information from our instruments.

In 1969, two Boeing engineers, Dr. Conrad Kraft and Dr. Charles Elworth, extensively researched the black-hole approach. The research program used a specially designed, visual, night-approach simulator. The engineers discovered that pilots unknowingly descended below glide slope because they maintained a constant visual angle to the runway. The visual angle



is the vertical angle of the landing environment in a pilot's vertical field of view.

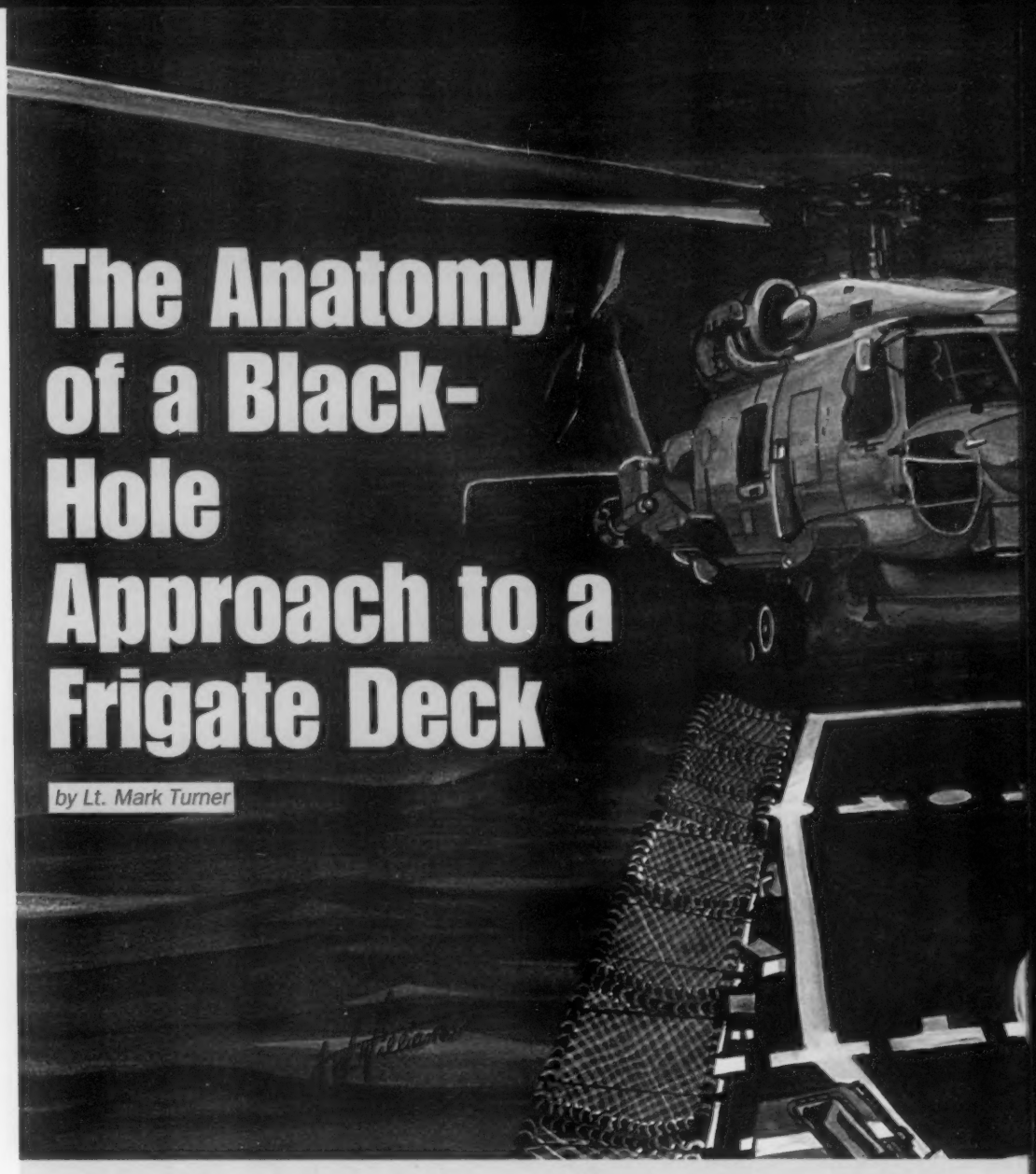
As a pilot flies toward a ship, the ship will fill a larger portion of his field of vision, increasing the visual angle. Simply, the ship is big on short final and small at the final approach fix. The visual angle of the landing environment decreases during a descent.

If the pilot maintains a constant visual angle or constant vertical field of view while closing the ship, the aircraft will descend below the glide slope on a descending arc instead of making a straight-line 3-degree approach.

Visual illusions are reinforced by other accepted hazards of night flying. These routine hazards include not seeing a natural horizon, dealing with an increased cockpit workload, feeling fatigued or disoriented, avoiding obstructions, and changing reference frames.

You don't need a scientific understanding of the physiology of flight to fly a good night approach. If aviators know why they occasionally are lured below the glide slope, they will rely more on their flight instruments instead of their senses.

Lt. Turner flies with HSL-37's Det 4.



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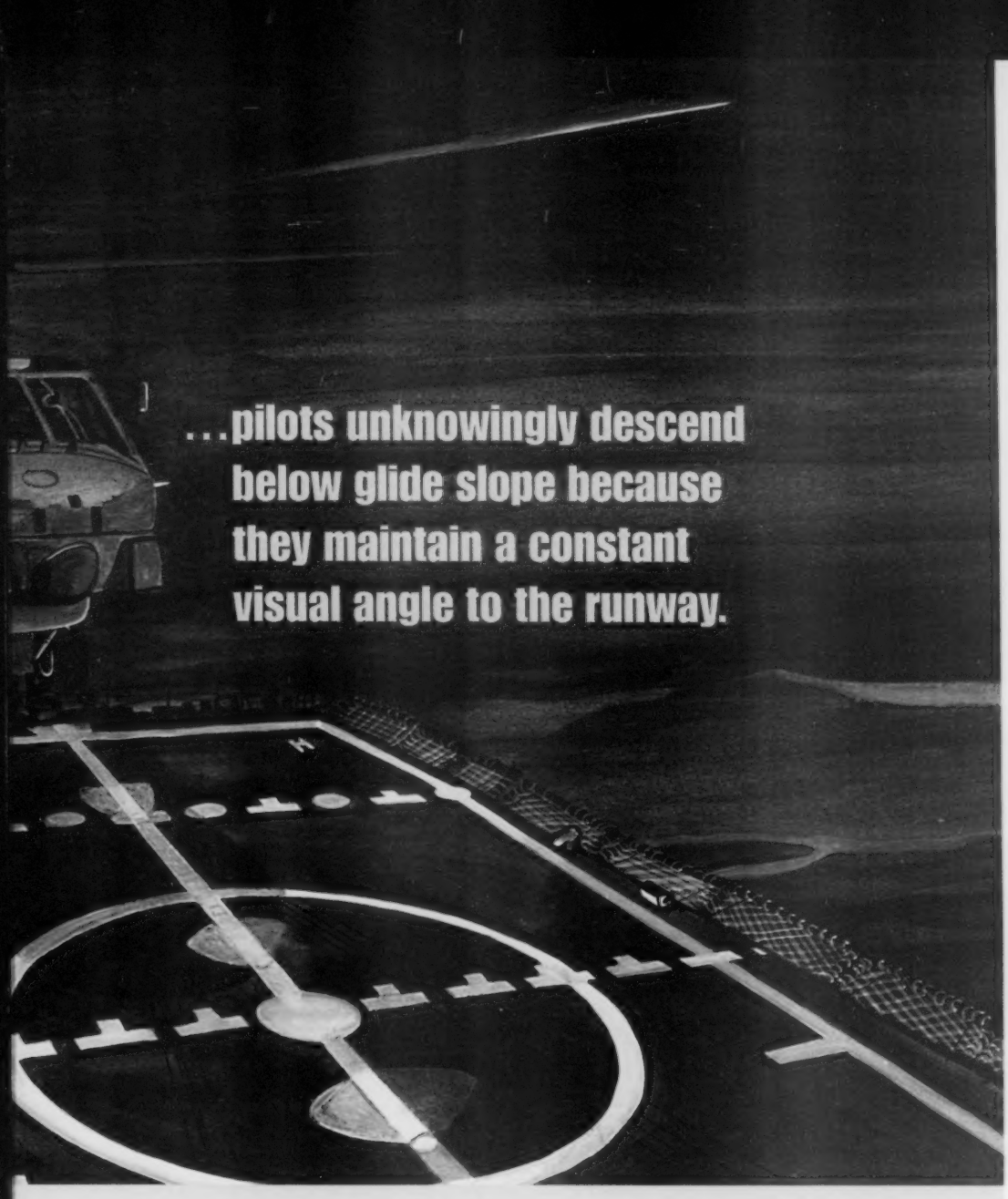

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Lt. Turner flies with HSL-37's Det 4.

Our Flat-Spin

...I was vaulted out of my seat face-first into the radar display.

Our first fight had gone well, even though we hadn't flown ACM in six weeks. It had ended with our playmate soundly beating our MiG-23 simulation. Then, it was our turn. We headed to our station while going over our fighter game plan once more. Initial contact was 25 miles at 24,000 feet. We prosecuted the intercept with an intermittent radar that dropped lock at 14 miles. We pushed to the merge.

The next thing I saw was that familiar smoke associated with TF-30 engines as the bogey swung our wing line toward the five o'clock position. We were defensive from the start – not where my pilot or I wanted to be.

"Break right!" I called over the ICS, "Bogey at right five." My pilot promptly started a hard right turn and put on the G's. Then it happened: our world turned upside down. Immediately, the Tomcat shuddered and proceeded into a coupled departure. Within three seconds of post-stall gyrations, we had entered a flat spin, followed by total disorientation.

My pilot said, "Lock your harness." As I tried, I was vaulted out of my seat face-first into the radar display. The radar hand-control unit was in my lap. My nav bag, which had been sitting on the left side of the cockpit, shot up like a comet and wedged itself between the canopy and right front glare-shield. Although my harness was locked, my straps were so loose that they only served to keep me from completely breaking loose and floating around the rear cockpit.

Within five seconds of the initial departure, the G-forces had pinned me forward. I tried pushing myself back into the seat, but it was impossible. I looked down at the radar scope, but didn't see a spin-indication arrow. Our indicated airspeed had decayed to zero. The altimeter needle passed through 20,000 feet, spinning like a propeller. I estimated the aircraft to be in a relatively level to slightly nose-low attitude.

After my initial "neutralize" call over the ICS, I gave airspeed calls. I was scanning for the characteristic indications of a spin recovery. Passing 16,000 feet, I still didn't see any signs that we were pulling out. Ejection was becoming a real possibility.

Passing 15,000 feet, my pilot said, "No recovery indicated, stick into the turn needle." Around 13,800 feet, the jet shuddered, and we began oscillating in pitch, indicating a break in the spin. Our sister squadron's pilot called, "Your nose is dropping." The airspeed spiked to 110, dropped to 90 KIAS, then gradually began to increase. I called our airspeed over the ICS to indicate we were flying and entering controlled flight.

The oscillations grew more violent as speed increased. Our jet spit out of the spin, spiraling in a 90-degree bank. Suddenly, the nose fell through the horizon, and the jet swung like a pendulum, as we headed for the deck. We went past nose-low bullseye, and for a split second, we were falling upside down. At 11,000 feet, I felt the pilot put G on the jet as he pulled toward the horizon. The aircraft was flying once more, and we had control. I was not going to eject. Our indicated airspeed quickly rose as we streaked toward the deck. Passing through 9,500 feet, it was above 300 KIAS.

With a shudder, everything went quiet. The radar scope blanked as the two stalled engines had caused the loss of main AC and DC power sources. In the one-to-two seconds before the emergency generator came

Adventure

by Lt. Ed Schmitt

The oscillations grew more violent as speed increased. Our jet spit out of the spin, spiraling...

on, we descended another 1,500 feet. We were completely NORDO between cockpits while hurtling toward the earth in a 40-to-50-degree dive. Unable to communicate, I again reached for the ejection handle, still hoping for recovery.

At 6,000 feet and 20 degrees nose low, the lights pinballed as the emergency generator restored electrical power. I asked the pilot if things were under control. A "yes" is all I heard. We bottomed out at 4,000 feet, relit the engines, and headed back to the ship with our wingman. What had seemed like an eternity had taken no more than 20 to 25 seconds.

As we returned, our clean and dry checks revealed no loose or missing panels. A controllability check proved the plane safe to take back to the ship. Fearing a FODed engine, or other more inconspicuous failures, we elected to fly a straight-in approach.

In retrospect, we learned many lessons. Neither my pilot nor I had flown ACM in six weeks. We should have given greater attention to this fact. Although we had live stores mounted, and had been flying with them for weeks, my pilot had never flown ACM with a Phoenix or Sparrow. Aircrew need to familiarize themselves with how the jet will perform with different external stores. Captive carry stores should be used whenever available during training.

Aircrew need to tighten their lap belts. My lap belt was cinched down halfway. Had there been prolonged, severe negative G's, I would have had a very difficult time reaching an ejection handle. Today, I cinch down my lap belt as part of the takeoff checklist.

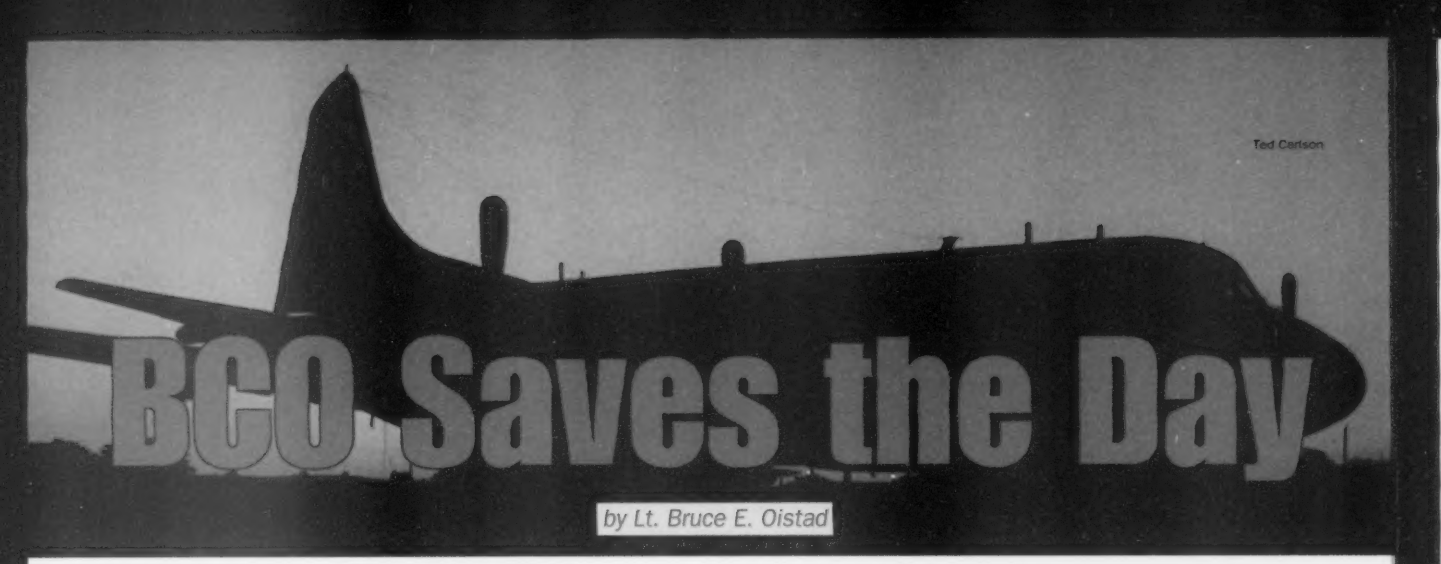
The pilot never heard many of the things I said over the ICS. Prioritize what you are going to say. The most important thing my pilot said he heard from me was my airspeed calls. They let him know when the jet was out of the spin. In extremis, your mind is only receptive to selective inputs. I had to force myself to stare at the gauges, instead of becoming mesmerized by the spinning horizon outside.

Time compression was a big factor, too. What seemed like an eternity was mere seconds. I had no idea how fast we were falling. The deck came up very fast. With no VSI in the back seat, you must watch your altitude.

Never have I experienced anything so disorienting. I have no doubt that the best way to train for a departure or spin is on the ground in a simulator, not at 22,000 feet. Before stepping into a jet for any dynamic maneuvering, make sure you've practiced how you are going to react. This goes beyond boldface. Reviewing spin procedures, lectures and simulators may be dry, but it can save your life.

We could have avoided our flat spin. What started as a good-deal ACM flight almost ended up as a Class A mishap.

Lt. Schmitt flew with VF-154. He is now assigned to the Office of Naval Intelligence.



BCO Saves the Day

by Lt. Bruce E. Oistad

We were on a detachment to Kinloss, Scotland. One day, after a typical preflight, we taxied for runway 26 using engines 2 and 3 because of the narrow taxiways. Approaching the hold-short, we started engines 1 and 4. Tower cleared us for takeoff and we took the runway.

After reviewing the performance data for takeoff one last time, my copilot, at the controls in the left seat, advanced power and called for the flight engineer to set takeoff power. It was clear to the flight-station crew that No. 3 was having a bad day. At the 80-KIAS power and airspeed check, it was no surprise that the FE called out low power on No. 3. My copilot immediately announced abort and retarded power.

With clearance from tower, we continued to the end and did a 180-degree turn on the asphalt at the end of the runway. Our plan was to taxi back and run up No. 3 while holding the brakes to determine if it had enough power for takeoff.

Approaching the numbers for runway 26, before our second 180-turn, Kinloss Tower informed us that a ground observer had reported our "port undercarriage" smoking. We completed our turn, set brakes and ran engines 2 and 3 up for brake cooling per NATOPS.

At this point, I had both port and starboard observers check the mainmounts for smoke. Both reported nothing unusual. I then raised the flaps so they could see more. While the observers were looking, with the TACCO and NAVCOM looking out their windows, it seemed like a good time to check out No. 3. Besides, if 1,000 SHP could cool the brakes, 4,000 SHP would cool them that much faster. Tower had already dispatched ground firefighting equipment, which had taken position around the aircraft. This is SOP for the RAF.

About this time, my IFT in the port aft-observer window called smoke on No. 1, followed by a similar call from the TACCO. After a brief discussion with the IFT as to how much and where the smoke was coming from, I began the checklist for engine fire on the ground. We pulled the E-handle, discharging the fire extinguisher.

Continuing the checklist, the aft observer still reported heavy smoke on No. 1. After allowing enough time for the fire extinguisher to work, we completed the checklist and dumped a second bottle into the smoking engine. I made a quick call to the tower to tell them we were evacuating for a fire.

The crew went out over the starboard wing and mustered aft of the aircraft. The RAF fire team was in position around the engine. After several minutes, they asked for help from the pilot and FE. While my FE told them how to open the engine's access panels, I was explaining to the crash crew supervisor what had happened. Then I noticed the starboard brakes smoking – a lot! My FE and I moved back while the fire team investigated.

Maintenance personnel found a broken fuel line on No. 1, a stuck starboard brake puck and a hydraulic leak. This was in addition to low power on No. 3. The fuel leak was between the low-pressure fuel filter and secondary pump. The smoke was fuel burning as it hit the engine. The starboard main mount was smoking because hydraulic fluid was hitting the hot brake puck.

If we had gone flying, the engine would have probably caught fire while the stuck puck cooked hydraulic fluid inside No. 3's wheel well. In the dark, the crew wouldn't have seen smoke on No. 1.

The BCO, a civilian bird control officer, had just happened to see something wrong and had the sense to tell the tower. He saved the Navy a lot of money in repairs and earned a big thanks from our crew. RAF Kinloss's safety officer recommended he be awarded their equivalent of "Sailor of the Month."

Lt. Oistad flies with VP-10.

Now I Understand

by LCdr. Mark Enderson

Nearing the end of my second disassociated sea tour (an oxymoron for Navy personnel, don't you think?) I was ecstatic when I got the nod to be the next editor of *Approach*. But, my elation turned to apprehension when my assistant editor hinted I should write an introductory editorial. My fears were somewhat allayed when I found it would appear in the CV/LSO issue. As a carrier aviator, I would be in familiar territory. My 15 years in the Navy have also made me intimately familiar with both sides of carrier operations, from the cockpit as a S-3 NFO, and from the ship's company perspective as a catapult and arresting gear officer, a.k.a. shooter on *TR*, and CDCO on *Ike*.

My squadron tour allowed me to experience the simultaneous thrill and anxiety of the catapult shot and hours later, the arrestment. One moonless night, with no horizon, led to the near-disastrous assumption that boat lights were stars. The aural tones from RAAWS saved us that night. Six hours on an ejection seat also taught me the true value of "turning the other cheek."

During my tour on *TR*, I gained a deeper appreciation of the herculean efforts of the ABs, and the ever-present dangers of the flight deck. Three events during my tenure as a shooter (two Class A mishaps, and a flight-deck mishap) highlighted those dangers. They were something I thought I would only see in crash-and-smash films, not up close and personal.

The first mishap occurred the second day out, at the start of our six-month deployment. I was training as an arresting-gear officer, as the air wing conducted carquals. An EA-6B trapped, and the arresting gear cable broke. The Prowler went over the side as the aircrew ejected. The most amazing thing was that it all happened in a matter of seconds.

The second event happened at 0340 on a moonless morning near the end of Desert Storm. I was aft of cat 3's JBD when an A-6 went into tension. The engine FODed, and the launch was suspended. I saw the sparks, but it wasn't until 4-5 hours later that I learned the full story as I watched the PLAT replay. Cat 3's topside petty officer, the ABE responsible for hooking the aircraft up to the cat (one of my guys) had been sucked into the engine. Fortunately, he survived with only a broken collar bone and bruises.

The final episode took place during another CQ. I watched a Hornet launch off the bow and the pilot eject. The now-unmanned aircraft climbed to about 2,000 feet, started a port turn and dove toward the ship. From my vantage point on the starboard side, it looked like it was going to be close. The aircraft hit the water 200 yards off the port side.

Before I returned to the Safety Center – I had served a previous tour as an aircraft analyst – I never thought much about these incidents as having any potential lessons learned, but I do now. You don't have to have a close call, a near-fatal brush with death, to gain a meaningful experience to share with your fellow aviators. My goal during my assignment here at *Approach* is to address the issues that are important to you. The articles in *Approach* allow us all to learn from our contributors' experiences. I eagerly accept the conn.

Endo


USS NIMITZ
NAVY